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BULLETIN

OF

THE NEW YORK ACADEMY OF MEDICINE

JANUARY, 1931

INCORPORATED 1851

PUBLISHED MONTHLY BY
THE NEW YORK ACADEMY OF MEDICINE
Fifth Avenue and 103rd Street
NEW YORK, N. Y.

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BULLETIN OF
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ACADEMY OF MEDICINE

VOL. VII JANUARY, 1931 No. 1

ANNUAL GRADUATE FORTNIGHT

INFECTIONS OF THE MIDDLE EAR

(Acute Systemic Infections From the Ear)*

Isidore Friesner

Otologist to the Mount Sinai Hospital

It has always seemed to me that of all the problems which are presented in the practice of medicine those concerning the general invasions are by far the most interesting. Discounting the bias which may naturally be ascribed to me, I nevertheless believe that the problems of the general invasions of otitic origin are second to none in their interest. The subject concerning which I have the privilege of addressing you this evening has many ramifications. I might say that for a number of years I have been concerned chiefly with the practical side of it.

For much of the scientific data which I am presenting to you I must quote most freely from Dr. Libman who perhaps more than any other man in America, has consistently contributed to the scientific aspect of this subject. I realize that perhaps this division with its attendant nomenclature may not be correct. I hope it will not be offensive, but inasmuch as it is obvious that the otologists bear the onus of this differentiation, I shall have to assume the burden.

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*Delivered October 22, 1930.

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I believe with Libman that it is essential at the outset to make use of an accurate terminology. "Otherwise one is very likely to make loose diagnoses and draw conclusions detrimental to the patient."

In the last few years the whole question of sepsis has been reopened particularly from the practical point of view in that we have found that transitory bacteriemias are much more common and perhaps much less serious than we had hitherto believed.

An invasion may be defined as the entrance of microörganisms into the general circulation without any reference to the effect of this invasion upon the patient. The term "invasion" then according to Schwartzman can be further subdivided into the so-called (1) transitory bacteriemia and (2) septicemia. While the concept expressed by the term septicemia might have been clear it has unfortunately been so much abused and as a result is now so indefinite that it had better be eliminated and the term bacteriemia substituted. Furthermore, the term bacteriemia is capable of being paraphrased as per example streptococcemia, staphylococcemia and pneumococcemia, each one of which expresses a clear cut idea. A general invasion then is a bacteriemia. A general invasion of otitic origin is a bacteriemia in which suppurative disease in or about the ear acts as the primary focus. In order to identify each of these types of invasions bacteriologically, the following criteria may be accepted:

I. In transitory bacteriemias—(a) The number of organisms found in a blood culture is small. This is judged by the fact that solid media usually remain sterile and growth appears only in the fluid media and then in most instances only in the well enriched fluid media. (b) The blood cultures do not remain repeatedly positive. In our experience with acute rheumatic fever or ulcerative nonspecific colitis, one positive culture would be obtained out of four or five taken. (c) The types of organism usually found in transitory bacteriemias as shown by Libman and others are *Streptococcus alpha, viridans* and *gamma* (non-

hemolyticus). The source of invasion in transitory bacteriemias is most likely to be either the upper respiratory or the intestinal tract in which the above mentioned bacteria are found as normal inhabitants. There is experimental proof for this contention.

1. Bull and McKee recently reported experiments on rabbits in which they were able to obtain positive blood cultures shortly after depositing bacteria on the surface of the nasal mucous membrane.

2. Desonbry and Porcher demonstrated that bacteria of many varieties may pass through the intestinal mucosa during the digestion of fatty substances and are found for a few hours only in chyle and in the blood. These findings have been verified so often that it is now a rule in all institutes of sero-therapy to bleed the horses only when fasting, if it is desired to obtain sterile serum.

3. Epstein and Kugel showed that postmortem blood cultures taken from patients dying from all sorts of non-infectious diseases are positive in a large number of instances. Since the microörganisms found are usually enterococci (Hirsch Libman streptococci), it is likely that the source of invasion is either the intestinal or upper respiratory tract in which these organisms are commonly present.

The mechanism of transitory bacteriemias can be outlined as follows. Under certain debilitating conditions, bacteria enter the blood stream from the intestinal and respiratory tracts. The organisms which thus enter the blood are usually of low pathogenicity and incapable of doing serious injury. The blood, or one should say the body, has the power of ridding itself promptly of such organisms. The process of the prompt disappearance is not known definitely as yet. In view of the fact that bactericidins in the true sense of the word do not exist for streptococci, it would be more logical to assume that the invading organisms behave in the general circulation as inert particles of colloidal substance and that the reticulo-endo-

thelial system is responsible for their elimination from the blood. What is the clinical significance of a positive blood culture characterized as above? One should be very careful in accepting the findings as indicating the etiology of the disease. In each individual case the clinical evidence must be most carefully scrutinized and correlated with bacteriological findings.

In contrast to the transitory bacteriemias—

II. Bacteriemias in which we are particularly interested: (a) The number of bacteria found in most instances is large. This is demonstrated by the growth in the solid media and by the fact that all fluid media are usually positive. There are, of course, exceptions to this. (b) If the number of organisms found in the first blood culture is small, this is apt to increase progressively in subsequent blood cultures. (c) Blood cultures are repeatedly positive. (d) The organisms found belong to the actively pathogenic and virulent groups. It is evident that a bacteriemia (non-transitory) is the result of an inflammatory process which is in free communication with the general circulation and which is aroused by virulent pathogenic organisms.

In order to use the bacteriological findings advantageously for diagnoses, it is necessary to analyze closely these findings from the various points of view as outlined above.

While it is evident that otitic infections bear a close relationship chiefly to the second group of invasions, namely, the bacteriemias (non-transitory), it might be in order at this time to ask whether a suppurative otitis media can be a factor in the so-called transitory bacteriemia. So far as my experience goes and I must admit it is limited, it is my impression that as part of the upper respiratory tract and perhaps in conjunction with it, a middle ear infection may be a factor in a transitory bacteriemia. We have had an instance of pneumococcus infection in the ear and mastoid and pneumococcus type I cultured from the naso-

pharynx, with a transitory pneumococcemia beginning several days postoperative. The lungs showed no changes. But a single blood culture was positive. Recovery was uneventful.

In the 1912 communication on the importance of blood cultures in the study of infections of otitic origin, Libman reports 80 per cent positive results in cases of otitic invasion or sinus phlebitis. Perhaps because of changes in the media and other improvements in technic our own experience has been that we have positive blood cultures in nearly 90 per cent, so that I cannot understand those who would minimize the value of blood cultures in suspected otitic bacteriemias. In fact I have been astonished at the utter disregard of this to me important diagnostic aid on the part of some of our foreign colleagues.

It must be borne in mind that particularly in a general hospital cases of sinus thrombosis are received in all stages of their development. It is established that the thrombus formation is part of a reparative process. Yet the thrombus itself may become infected and subsequently reinfect the blood stream. On the other hand so long as the ends of the thrombus remain sterile and the area of phlebitis does not extend beyond them, the blood may remain sterile. Such a case may even be afebrile for a number of days. We have observed an instance of fluid pus in the lateral sinus with persistently sterile blood cultures.

In one hundred cases of otitic sinus thrombosis whose histories we have studied and in which blood cultures were made we have found the following:

In eighty-five (85), cultures showed streptococci, two of these were the anhemolytic variety. In three the streptococci could be grown only anaerobically. In one of the latter the preliminary blood culture showed an aerobic streptococcus. Following operation the symptoms of sepsis continuing, it was found that subsequent aerobic cultures were sterile, but that streptococci could be obtained with the anaerobic technic. It is peculiar that these organisms

should so rapidly have assumed the quality of anaerobiasis. It is particularly, however, in the presence of anaerobic streptococcus infection that the symptoms of sepsis evidence an excessively virulent nature. Two of the cases with anaerobic infections had lung abscesses, and one a large temporal lobe abscess. In only two of these one hundred cases studied was there a *B. mucosus* infection. A rather small proportion. Ten cases had sterile cultures; two *B. proteus;* one *Staphylococcus aureus.*

In no instance was a pneumococcus, except Type III, responsible for a sinus phlebitis. In addition to the case described above there were during the period encompassed by these case reports five additional cases of pneumococcemia studied on the otological service. The first was admitted with a pneumococcus type I in the blood and spinal fluid and ceased on the day of admission. There was no postmortem. The second was admitted with a fulminating meningitis, with a pneumococcus type II in the blood and spinal fluid. No operation was performed. At the postmortem, no sinus phlebitis was found. The third was admitted with an acute mastoiditis with temperature 103.2 with a pneumococcus type IV in the blood. At the operation on the mastoid, the sinus was exposed and was normal. Later there developed a pneumonia at the right base. Recovery was uneventful. Fourth—three weeks after an operation for acute mastoiditis there was a chill and rise of temperature to 105, which persisted for forty-eight hours and then returned to normal. A blood culture taken during the chill showed a pneumococcemia. Subsequent blood cultures were sterile. The sinus was exposed and looked normal. Patient recovered. Fifth—this patient was admitted to my service during the past winter. She was a child of six and had a temperature of 102.6 when admitted. Both ears were discharging; there was no evidence of mastoiditis. The child appeared gravely ill. Physical examination otherwise negative. On the night of her admission, the temperature rose precipitately to 105.2. Blood culture at this time showed a pneumococcus type IV. The ears cultured pneumococcus type I. For several days fol-

lowing the admission her temperature ranged between 102 and 104. The original x-ray of her chest was negative but the second x-ray showed a pneumonic area at the right base. During the interval before the positive x-ray report the question as to whether we could be dealing with a bacteriemia of otitic origin was discussed, and the possibility excluded on the basis of the pneumococcemia. I can only emphasize Libman's statement, namely, "it is essential that those who report such cases (i. e. sinus phlebitis due to pneumococci), give the exact description of the organism found and state their methods of identifying organisms in the pneumococcus streptococcus group." From my personal experience with cases of otitic bacteriemia, either under my care or seen in consultation, I do not believe the pneumococcus, except type III, is ever an etiological factor. It seems to me that pneumococci show little tendency to attack the veins. Turning to the pathological changes in the lungs attempting to confirm this opinion, Rabin states that in pneumonia of pneumococcus origin there is rarely an involvement of the pulmonary veins. Occasionally late in the disease there is found leucocytic infiltration in the walls of the very small veins on microscopic examination. More rarely, the walls are invaded by bacteria. A constant bacteriemia is not dependent upon the infection of the small veins alone. Lesions of the pulmonary vessels cannot be demonstrated as a cause for the invasion of the blood by the pneumococcus in the early stages of pneumonia. Thrombo-phlebitis of the macroscopic veins is the important cause of a persistent bacteriemia. A case of this character of pneumococcus origin has not come under our observation. On the other hand, in streptococcus infection of the lung phlebitis of the small veins is quite common. Occasionally the larger ones are involved and give rise to a general invasion.

Last winter I was asked to see a young man who had pneumonia. His illness began about ten days before with an acute upper respiratory infection and pain in both ears. During the first week and before the physical signs in his lungs developed, both ears had been opened, both mas-

toids operated upon and one jugular vein tied. Blood culture was sterile. From a mouse injected with the sputum pneumococcus type IV was cultured. It seemed obvious to me after such an experience that it was important to discuss at length the rôle of the pneumococcus in general invasions of otitic origin.

It must not be supposed, of course, that in the presence of signs and symptoms definitely indicating a bacteriemia, with a history of a recent or the presence of a suppurative otitis media and no other focus one should be deterred from the proper surgical interference because of a sterile blood culture. Yet the latter, if properly evaluated and correlated, is of great assistance in determining the immediate course of action.

Dr. Libman and I recently saw a young girl who had been operated upon for an acute mastoiditis. About a week following operation, she began a continuous irregularly septic temperature, had a leucocytosis and a rapidly progressive anemia. The hemoglobin dropped from 72 per cent to 52 per cent. There were no physical signs in the chest and no metastases. Four blood cultures at about forty-eight hour intervals made both aerobically and anaerobically were sterile. While we felt that in all probability she had an otitic sinus phlebitis, we advised against immediate interference. Finally the physical signs of bronchopneumonia with pleurisy appeared. Recovery was complete without any further surgery.

There have been a number of reports of general invasions with streptococcus in the presence of middle ear and mastoid disease in which neither macroscopically nor yet microscopically were there evidences of sinus phlebitis or thrombosis. So that in contra-distinction to the attitude of Libman, the belief that bacteriemia of otitic origin may occur without the presence of changes in the sinus wall has gained ground. The osteophlebitic theory of Körner received its quietus many years ago. It seems probable that the cases of so-called otitic invasion without changes in the cranial blood sinuses, belong to the bacteriemias of

unknown origin and should not be classed as otitic. If a cryptogenetic invasion can occur in the presence of uninfected ears, it is patent that a similar condition might exist in the presence of middle ear disease and the ear not be the focus of infection. Instances of this type, however, must be rare.

The local pathological changes in sinus phlebitis, that is the changes in the walls of the veins, formation of the thrombus, etc., are now too well known to require any discussion here. There are, however, several points with regard to the pathology of this condition which merit consideration. Fiendt and Blau reporting separately about 250 cases of sinus phlebitis state that pathological changes in the bony plates overlying the lateral sinus were present in almost 80 per cent of the cases. In his monograph, Braun states in most cases of sinus thrombosis the inflammatory tract can be followed macroscopically from the middle ear to the thrombus. There is necrotic bone in the mastoid which leads directly to the sinus wall. While I believe that this applies generally to all the cranial sinuses in contact with the temporal bone, no matter which is involved primarily through otitic disease, there is nevertheless a considerable number of instances of sinus phlebitis in which at the mastoid operation or during the subsequent uncovering of the sinus the bony plate over the latter gives no macroscopic evidence of disease, nor does the appearance of the vein wall itself, always give information as to its contents. What the pathway of infection is in these cases is still problematic.

We have observed a considerable number of cases of general invasions of otitic origin in which the mastoid was sclerosed but macroscopically free from any disease whatsoever. In these there can be no doubt that the infection passed directly through preformed pathways, either vessels or dehiscenses from the middle ear to the jugular bulb. In 1928 Maybaum reported a series of nine cases of primary bulb thrombosis from the otological service of the Mount Sinai Hospital. In three of these the mastoid proc-

ess was pneumatic without any gross evidence of infection. In the remaining six the mastoid was sclerosed and not diseased. In every instance the sinus plate was intact. In seven of the nine there was an obturating thrombus in the sinus. One sinus contained fluid pus. In only one could a thrombus not be demonstrated. Of the nine, eight had positive blood cultures.

With the limited time allotted to me I cannot describe in detail the pathological changes (metastatic) in remote parts affected by this disease. Schwarz has repeatedly demonstrated that live streptococci may be excreted in the urine in children without any clinical evidence of kidney damage, and this condition may persist for some time until the blood becomes sterile. Indeed, streptococci may exist in structures probably less resistant to infections than the kidneys without clinical evidence of damage. Thus I have recently seen a patient with a streptococcemia due to a sinus thrombosis from whose spinal fluid streptococci were cultured. There were seven lymphocytes per cubic millimeter. There was no meningitis. The child recovered after operation on her lateral sinus and jugular. It is interesting to speculate regarding the manner in which the blood stream is relieved of the infectious agent. We have seen an instance of severe chill at night with colonies of streptococci too numerous to count in the blood culture taken at this time and twelve hours later the blood culture be sterile. This phenomenon was repeated three or four times. Instances of multiplication of bacteria in the blood in invasion of otitic origin have not come under my observation. Comparatively little attention has been paid to the lungs as one of the important organs whose activities result in the sterilization of the blood. Physical signs in the lungs in cases of otitic bacteriemia are quite frequent. From the analogy to experimental tuberculosis, there is considerable reason to believe that the lungs play an important rôle. In a rabbit injected intravenously with bovine tuberculosis, the lungs show the first evidence of the disease. Indeed death may occur before the other organs are involved. If, on the other hand, the rabbit be in-

jected intraperitoneally, the mesenteric glands, the liver and the spleen show tuberculous lesions while the lungs may remain intact until the last stage. The lungs, the liver and the spleen bear a similar relationship to the reticulo-endothelial system whose function it is to eliminate the organisms from the blood stream. Each organ, of course, in addition has its specific cells. It must not be forgotten that in bacteriemias of otitic origin, the invasion through the venous channel passes from the heart, primarily through the lungs. Perhaps a continuation and extension along experimental lines of the work on jugular cultures developed by Ottenberg may do much toward elucidating the question as to the activity of the lungs in this connection.

The occasional presence of abdominal pain without any physical signs as a symptom associated with bacteriemias of otitic origin is suggestive from the clinical side that the organs here too are in some manner involved.

So far as the symptoms generally are concerned they do not differ in their essentials from those of general invasions of other origins. It is true there are sometimes local manifestations such as dilatation of the veins of the scalp and edema due to the extension of the phlebitis and thrombosis to the superficial veins through the emissary. Of importance too as a local sign is the enlargement of the gland at the angle of the jaw. It is my impression that a gland in this situation involved through an adjacent phlebitis differs considerably from the ordinary adenitis secondary to an acute upper respiratory infection. In the former the gland is firmer and as a rule very much more tender. There is occasionally pain or a feeling of fullness in the homolateral side of the head or pain in the eye. Indeed the entire clinical picture may at the beginning closely resemble those instances of osteitis of the petrous pyramid with 5th and 6th nerve involvement. Occasionally the early symptoms of a sinus thrombosis resemble those of a brain abscess; there may even be physical signs suggestive of beginning pyramidal tract involvement. Fever, chills, sweats

are common, although the chills occur in but half of the cases and infrequently in children. The fever is often at first sustained at a high level and only after several days do the characteristic drops and subsequent rises occur. Frequently the character of the temperature curve more than the height to which the fever rises, suggests a general invasion. This is particularly true in the aged and debilitated. The pulse is usually rapid and corresponds at least in the beginning with the temperature. As the disease progresses the pulse rate increases. An excessively rapid pulse is of bad prognostic import. Enlargement of the spleen is common and not infrequently both spleen and liver are palpable. The characteristic mental condition is euphoric but the disease may begin with delirium or having persisted some time may be associated with a psychosis, a wildly delirious state resembling the mental symptoms of belladona poisoning. A rapidly progressive anemia naturally follows the presence of hemolyzing organisms in the blood stream. As a rule there is a leucocytosis of moderate grade, not so marked as is usually found in erysipelas, pneumonia or meningitis. There may be a leucopenia.

Metastatic infections secondary to the otitic bacteriemias may occur anywhere in the body. It has seemed to me that they are more common in children than they are in adults. This has been so in our own cases and so far as the articular involvements are concerned the site of election in children has been the hip. Petechiæ I have not seen, particularly the white centered lesions of the conjunctiva which occur with endocarditis. It is my belief that the latter lesions do not complicate infectious foci on the venous side of the circulation.

One other sign has been of considerable help to us. I refer to changes in the ocular fundus. About 16 per cent of our cases show definite changes in the nerve head. In these definite changes I do not include congestion of the retinal vessels alone. The changes to which I refer range from blurring of the disc margins up to a measurable papilledema as high as four to five diopters.

It is a curious phenomenon that when a papilledema begins before operation it frequently increases after adequate surgical measures have been instituted which control the general invasion. It may increase in the absence of all other signs or symptoms and may last several months. No satisfactory explanation has been offered, since it may exist and even increase, with no other sign or symptom of increased intracranial pressure and finally go on to complete recovery.

I shall not burden you with a recital of the details of treatment nor with a discussion of those points in the treatment of this condition which are still more or less unsettled. It suffices to state that treatment is solely surgical. Broadly it consists of an attempt to destroy the continuity of and obliterate the infected vessel. In this connection it must not be forgotten that a spontaneous cure of a phlebitis of the lateral sinus can and not infrequently does occur. I have had no evidence which would make me believe that transfusions of any character contribute except indirectly to the establishment of cure. Transfusions contribute as does food or any other supportive measure and not otherwise.

INFECTIONS OF THE ORAL CAVITY*

HENRY SAGE DUNNING

Professor of Oral Surgery,
Columbia University Dental School

It is difficult to know just what to discuss in a short paper devoted to the infections of the oral cavity. In consulting with the Committee, I gathered that it would be better for me to deal with the more common lesions of the mouth and jaws rather than to attempt to cover too large a field this evening.

In the beginning I would like to call your attention to the fact that the mouth is a very unclean cavity and that the bones of the jaws become infected more often than any other bones of the body. The maxillary bones and mandible become infected in three ways, namely thru the *gum attachment, the gingival, the peridental route;* next thru *the teeth themselves* by means of caries opening into the pulp, entering the canal and thence thru the *apex into the bone.* This may be called the *intra-dental route,* as the infection travels thru the tooth itself into the investing tissues. The next important method by which the bones become diseased is, of course, thru the blood. The first *two* described routes, I believe are the most important of the three.

In discussing the first or peridental route we have,

1—Acute periodontitis
2—Chronic periodontitis
    A. Subacute
    B. Suppurative or pyorrheal
    C. Alveolar osteitis

*Delivered October 22, 1930.

The above classification of Goadby is very good, I think, in describing infections in or at the gum attachment of that modified periosteal covering of the roots of the teeth. This covering is called the periodontal membrane and is attached to, and blended with the gum tissue at its outer side or mouth part, to the alveolar process forming the tooth sockets on its inner surface as well as to the cementum covering the dentine of the body of the root. The periodontal membrane or *the dento-alveolar periosteum* is the specially modified *periosteum* of the bone which has undergone changes thru development. The function of the membrane is to attach the teeth to the jaw bones. Thus, the membrane is traumatized considerably and is affected by neoplasms, rheumatic conditions, atrophic changes and hypertrophic changes in fevers. *Secondarily* the periodontal membrane may be infected by secondary infections in systemic disease by the spread of infective processes from the gums or teeth, and the spread of disease from the adjacent bony tissue.

The term pyorrhea alveolaris is improperly used and is often used to describe almost any gum infections. The term really means "a flow of pus" from the alveolus.

Some atrophic and non-suppurative infections of the dental periosteum and alveolar process occur that lead to the exfoliation of the teeth after their becoming loosened, without the aid of a purulent discharge from the alveolus. Secondary infections caused by microörganisms do occur, in these cases the teeth become loose and pus oozes from the alveolus. This is so-called "true pyorrhea alveolaris." We may have a simple catarrhal gingivitis or a necrotic gingivitis may cause an infection of the alveolar attachment that will simulate pyorrhea. A great deal of work has been done of late in the investigation of the diseased processes infecting the periodontal membrane in its entirety. Many names have been given to this condition, namely suppurative *periodontitis, pericementitis, alveolar osteitis* and *periodontoclasia.* All these terms are used to denote a pyorrheal condition. The term perio-

dontitis is a good one as it shows the tissues that are first attacked and their participation. Secondary infections of the surrounding structures commonly follow just as a periostitis may lead to *an osteitis* so a *periodontitis* may spread to the bony walls of the alveolus causing an *alveolar osteitis.* The etiology of periodontitis is different, at times, it may be caused by drugs that produce an infection at the gingival junction.

I feel that the term "pyorrhea alveolaris" should be used to denote the flow of pus from an alveolus, and the term periodontal disease used to describe a pathological condition of the periodontal membrane or periosteum of the tooth. Periodontitis may be acute, subacute or chronic. In any of the stages, pus may be present or absent. There may be an osteitis present.

Infections of the soft tissues that invade the free margins of the gums, called the gingivæ, are quite numerous and have been classified by many writers on this subject.

Pyorrhea alveolaris, which is sometimes called suppurative periodontitis, is closely associated with gingivitis, but it affects the periodontal membrane and its attachment and has a pathology and clinical symptoms that make it of special interest to the oral practitioner.

The word *Stomatitis* is used, as a rule, to describe an infection of the mouth as a whole, but it may have its origin in the free gum margin. An example of such an infection is Vincent's stomatitis which may invade the gums at their gingivæ and later spread throughout the buccal cavity.

Most cases of gingivitis spread to the underlying adjacent tissues and in the majority of instances have for their origin some form of organism. The atrophic and traumatic forms of gingivitis are not at first bacterial, but often become secondarily infectious. Necrotic, mycotic and probably the catarrhal types of gingivitis are of bacterial origin. The chronic forms of gingivitis including the hypertrophic, are probably due to the great variety of bacteria that are ever active in the mouth.

Traumatic gingivitis is often caused by the tooth brush, as most brushes are unclean and many are too stiff. The gums' margins recede and the denture becomes exposed and the teeth then become sensitive.

The gum margins are apt to be abraded in certain areas where the necks of the teeth are more prominent and are exposed to more injury in the brushing of the teeth. There is no pus present, as a rule, but the teeth appear to be eroded at their cervical margins and little smooth cups in the denture are usually seen. This condition is only found on the buccal or labial aspect of the gums and teeth.

There is an apparent atrophy or loss of gum tissue at the gingival margins. There may be a thickening of the interdental papillae, but the gum margin overlying the neck of the tooth is generally thin and quite pale in color. There are many other causes of traumatic gingivitis and we might mention in passing, those caused by fractures of the teeth and alveolar process, ill-fitting appliances, ligatures, tooth picks and other foreign bodies.

Catarrhal gingivitis may occur at any age, but is generally associated with a catarrhal condition of the mucous membranes of the upper air passages.

The mucous membranes of the gums and cheeks are generally swollen and shiny. Small *herpetic* patches may appear on the gums later. The gums are sore and the teeth feel loose and elongated. The gums do not, as a rule, bleed and they may appear anæmic altho, at times, edematous.

There is, as a rule, no evidence of suppuration, but there is a considerable amount of desquamation of the mucous membrane and gums and an accumulation of debris around the gum margins. The condition generally terminates upon the cessation of the catarrhal inflammation of the mucous membrane of the nasal passages and the throat.

The Micrococcus catarrhalis and pneumoccus are found.

Mild acid mouth washes are good and gentle swabbing to clean the teeth and gums is indicated. This form of

stomatitis is, as a rule, mild but may be, if neglected, forerunner of a so-called pyorrhea.

Chronic gingivitis is found in the unclean mouths of middle aged people. The gums are red and bleed easily.

There is no pus in evidence but much debris around the necks of the teeth. The condition is often not recognized at first, but is very chronic. The disease generally begins with soreness around the necks of the teeth. The gums may become ulcerative in four to five days and this condition spread to the mucous membrane of the cheeks. There occurs, at times, a yellowish slough and when this comes away, the gums are quite painful. The ulcerative surfaces are irregular and are healing and breaking down at intervals. There is apt to be a slight rise in temperature and diarrhea at times occurs. The breath is fetid. The entire surface of the gums may be affected but the attachment of the teeth is not impaired. The patient finds it very difficult to take solid food. The sub-mandibular glands may be swollen.

Spirochætes are present at times, gram negative threads may be found. Sometimes a diplo-bacillus has been isolated.

The mouth and teeth should be thoroughly cleansed at frequent intervals. Mild mouth washes and cotton swabs should be used to remove gently the debris around the necks of the teeth. Fruit juices and light nourishing food should be given and the patient's general condition improved as much as possible. This condition is very apt to recur especially if the hygiene of the mouth is neglected.

Hypertrophic Gingivitis

The chief characteristic of this form of stomatitis is the enlargement of the gingival flap or margins of the gums. It may be acute or chronic and it may be localized or spread to the entire gum covering of the bones. It may be confined to one or more teeth due to local crowns and bridges around the teeth. In the beginning only the gum tissue is

involved, but later on the alveolus may become affected. The gums often become infected during this condition and especially where the teeth are irregular.

The gums are swollen, congested and bleed easily. The attachment of the gums appears to be impaired but there is no discharge of pus, as a rule, from the gingival margins. Much debris collects around the teeth and gums including food, epithelial cells and mucus. The Leptothrix racemosa of Vicentini may be found in large numbers when a culture is examined. The swollen surface of the gum may be nodular, irregular and turgid in appearance. There is little pain. The extent of the condition generally depends upon the amount of the irritation. There is a fetid odor present. The condition generally corrects itself in children, but if not treated in the adult it may go on to *infection of the alveolus and eventually* loss of teeth.

The teeth should be carefully scaled and kept clean. All irregularities should be corrected and all irritations around the neck of the teeth should be eliminated. Sometimes the *hypertrophic* tissue should be removed either with a knife or cautery. Astringent mouth washes are, at times, useful. All systemic disorders should be treated at the time the local condition is being cared for. This form of gingivitis may become chronic and may be localized, general, circumscribed or diffuse.

Atrophic Gingivitis

A gradual shrinking or wasting away of the gingival tissue. This is due chiefly to the affection of the submucosa, and an atrophy of the gum as a whole. It is not, as a rule, caused by an injury.

The edges of the gums are pale and irregular, the contour of the gum appears fuller and thicker and the interdental papilla is thickened as the process of shrinking progresses, the gum attachment is greatly impaired and the alveolar process may become infected. The mucous membrane of the cheeks may be rather anæmic in appearance and the mouth is, as a rule, dryer than normal, due to an

impairment of the mucous glands. The alveolar process appears to be thinner than normal at times, and more translucent. This condition is more common in males than in females.

It is sometimes difficult to recognize this form of stomatitis during the onset of the disease. It may be mistaken for the simple traumatic variety of stomatitis. The absence of a purulent discharge and the lack of bleeding and congestion differentiates it from what we call pyorrhea alveolaris.

It is difficult to treat. Massage of the gums may help in giving the parts better circulation. When the cervical margins of the teeth become badly exposed, the attachment impaired, the teeth should be extracted. Great care should be given to the hygiene of the mouth.

Mycotic Gingivitis, Thrush, White Mouth

There are large white areas on the gums sometimes simulating those of diphtheria. These are found on the tongue, buccal mucous membranes and the fauces. There may be a sweetish acid odor.

There is no pain, as a rule, but it may develop when the mucous membrane becomes abraided when the white patches are removed. It occurs in young infants and children under five years of age. It may affect adults in the terminal stages of some of the wasting diseases, notably tuberculosis. In children the onset is rapid and is often accompanied by gastro-intestinal disturbances.

The white layer on the gums is due to the growth of Saccharomyces albicans. There are found large numbers of yeast forms and mycelia. The disease is often caused by unclean feeding bottles and unhygienic conditions of the mouth in infants.

This disease responds quickly to treatment. A mild alkaline mouth wash and cotton swabs will generally render a cure. *Metabisulphite* of soda is a good specific. The mouth hygiene must be carefully noticed. This condition

may be mistaken for diphtheria and mercurial stomatitis at times.

Necrotic Gingivitis

(Vincent's angina, ulcerative stomatitis, trench mouth, gangrenous stomatitis).

This is a gingivitis beginning in the free margins of the gums. There is an acute necrotic inflammation which spreads rapidly buccally. This is generally associated with pain, foul breath and perhaps gastro-intestinal disturbances. The disease occurs often in childhood and may be a complication following *diphtheria, measles, scarlet fever, scurvy and perhaps dysentery.* There have been outbreaks of this disease in many of the armies in various campaigns. It was called "trench mouth" during the world war and affected many of our soldiers in France.

The disease spreads more rapidly in children than in adults. A sharp grayish white line of necrotic tissue appears along the gum margin. There may be a retraction of the gums away from the teeth and the gums bleed readily at the gingival margins. There is much pain at times, and it is difficult for the patient to eat or to brush the teeth. No membrane is formed, but there is, at times, a considerable amount of sloughing tissue. There may be a temperature of 100—103 degrees, associated with gastro-intestinal disturbances, a dirty tongue and a peculiar foul smelling breath. The ulceration has a tendency to heal in one place and break down in another. It may start around one tooth and spread to others. There may be glandular involvement. Many fusiform bacilli and spirochætes are found in the ulcerative margins of the gums. The disease is closely connected with that of noma and in children there is always a danger of an extension of the infection into the deeper tissues.

A definite diagnosis can be made by means of a smear taken from the ulcerating surfaces. This disease may affect the tonsils, the fauces and the pharynx and the soft palate. It may start either in the gums or in the throat.

The treatment is local and general. The mouth condition can be cleaned up quite rapidly by means of Dakin's solution spray and by the application of Fowler's solution, powdered perborate of soda and chromic acid, applied by means of cotton swabs. Tooth extraction or other surgical procedures are contra-indicated during the active stage of this infection. Salvarsan intravenously has been used with good results. The condition is apt to recur if there are many gum pockets which cannot be kept clean, and if the teeth are very irregular. It is not exceptional to cure this condition apparently in ten days to two weeks and to have it recur a month to six months and even one to two years later, especially if the patient is careless in the hygiene of the mouth.

Noma, Cancrum Oris

This disease is a most rapidly spreading process of gangrene of the gums and cheek and invades the surrounding hard and soft tissues. Spirochætes and fusiform bacilli are found in great numbers.

It generally starts with a small ulcer on the side of the cheek. It appears first as gray-white slough and is generally accompanied by a small ulcerative patch on the gum margins. The early picture of this condition is much like a Vincent's angina and may arise in the throat and spread to the mouth. If the gray-white slough is removed, it leaves a raw bleeding surface that is very painful. There may be multiple ulcers but one side generally becomes hard and swells and goes on to necrosis and perforation. The lips and face may be greatly swollen also and at the same time the temperature rises to 101—103 with a very rapid pulse. As the ulceration spreads, large portions of the cheek and perhaps portions of the bone are thrown off leaving a deep-seated ulcer. Severe swelling of the glands follows and the patient may die from exhaustion and toxæmia.

The disease generally occurs in young children who have become greatly debilitated by infectious diseases or are

suffering from malnutrition. There does not appear to be sufficient evidence to say that this disease spreads from one child to another, but the child should be isolated from others.

The outcome in children is very bad; the death rate being high, it is most important to try to check the ulcerative process as soon as possible. Swabbing with dilute chromic acid and the internal administration of potassium chlorate, also iron is indicated. The intravenous injection of salvarsan seems to be of great benefit in certain cases. It is good practice to build up the patient as much as possible by a generous diet, cod liver oil, etc., and promoting good oral hygiene.

Alveolar Abscess

Dental caries, or the decay of teeth affects the civilized races more than the savages. The teeth become destroyed by bacterial action upon fermentable food particles that become attached to the teeth. Organic acids, principally lactic, are produced after carbohydrate fermentation has taken place. The lactic acid formed attacks the lime salts constituent of the tooth which in the enamel is about 90 per cent of the entire substance. When the decay reaches the dentine of the tooth, the process travels faster as the dentine contains more organic matter in its matrix and is more soluble in organic acids. The dentine is gradually destroyed and bacterial products filter thru the canals in the dentine to the pulp chamber or to the nerve of the tooth. Here it may reach the blood stream. The pulp now becomes inflamed and undergoes suppuration, gases are formed and if the tooth is filled, the infection travels in the only direction it can, namely to the open end of the tooth, out thru the apical foramen. Thus a *dento-alveolar abscess* is formed as the tooth and the contiguous tissues are infected. The above pathological picture has been called a "gum boil" by the medical profession and laity in the past, but this term is now not recognized.

An alveolar abscess may be acute or chronic and in most cases, arises from a pulpless tooth. The cause is generally

a carious tooth but in some cases the pulp of a tooth that has no cavity may become non-vital by trauma, or shock caused by extreme heat or cold or constant irritation from a deep seated filling. Organisms may enter the pulp chamber from within the tooth or from without inwards; and death of the pulp follows. Bacteria and their products escape thru the apex of the tooth to the peridental membrane where a sac or granuloma is formed and inflammatory reaction takes place in the alveolus and the bone becomes involved. The alveolar plate may now become perforated and the abscess become sub-periosteal. If the process continues the abscess may strip up the periosteum covering the bone and may travel for some distance or rupture thru the gum near the seat of the primary cause of the trouble, namely the infected tooth. The acuteness of this condition depends greatly upon the virulence of the organisms present and the resistance of the patient.

The number of instances where the pulp becomes infected thru systemic blood infection, I think, are few. The lateral communications of the pulp thru the walls of the root to the peridental membrane as shown by Black and Howe, make it extremely difficult to ever really sterilize a root canal after it has become infected. Probably all pulpless teeth are, or become infected and perhaps the most important question now before the dental profession to decide is whether or not pulpless teeth should be retained or removed. According to Dr. Billings too many teeth are now being extracted. I rather feel that most infected teeth should be eliminated that cannot be rendered aseptic. A chronic alveolar abscess generally starts from an infected pulp, but it may arise from a peridental suppuration that enters the alveolus of a vital tooth. In this case the pulp in the tooth in the affected alveolus becomes non-vital quite early.

All the symptoms of inflammation are present in the acute stage of an alveolar abscess. The impaired function of the tooth is generally brought to the attention of the patient in no pleasant manner when the patient unwit-

tingly bites on the tender tooth. The inflamed and swollen peridental membrane causes the tooth to be somewhat projected outward from the alveolus and the tooth is very painful to percussion. The radiograph may show an infected area around the apex if the process has continued long enough to have caused any changes in the structure of the bone.

The acute symptoms of the above may pass after the abscess has pointed and discharged thru a sinus, thus relieving the pressure on the tissues. The sinus, may after awhile, close up and disappear, leaving only a little scar or a thin watery discharge which may persist for months or years. The sinus generally leads to the apex of the infected tooth.

The bacterium found in an alveolar abscess of an apical origin is generally the Streptococcus viridans and a culture can best be obtained by the careful extraction of the infected tooth without allowing it to touch any of the tissues of the mouth or to become contaminated by saliva. Henrici and Hartzell have obtained cultures by trephining thru the alveolar process. This is a difficult procedure and one that is not satisfactory in most cases. *Alveolar abscesses resulting from periodontal* infections may show cultures containing the Staphylococcus aureus and other bacteria.

It is quite easy to recognize an acute alveolar abscess as a rule. There is generally present swelling and thickening of the tissues, the tooth is tender to percussion and there is generally considerable pain on the affected side of the mandible or maxillary bone. It is much more difficult to diagnose a chronic alveolar abscess, especially when the abscess has not "pointed" and is still deeply buried within the bone. Radiographic examination in the chronic cases is of great assistance and also the vitality test of the teeth in the region of the supposed infection. It is important to know at an early period whether the teeth are vital or non-vital as most alveolar abscesses are caused by pulpless teeth. In chronic cases the pain is felt mostly at

night when the patient is in the recumbent position. A slight rise in temperature may occur in either the acute or chronic stage and quite often the patient may, at times, feel chilly and generally uncomfortable. They cannot eat with comfort and their sleep is seldom uninterrupted. An alveolar abscess in the maxilla often infects the maxillary sinus and may cause also, a rarefying osteitis of the maxilla or mandible, which is often difficult to eliminate. Actinomycosis, mercurial stomatitis, phosphorus necrosis, specific lesions, and neoplasms may complicate at times, the diagnosis of an alveolar abscess. Therefore any swelling in and about any part of the jaw bones must be approached with great caution.

Neglected or improperly treated alveolar abscesses may cause the patient a great deal of discomfort and, at times, permanent deformity. For instance, an abscess may drain thru the tissues to the face or under the lower border of the mandible to the neck causing unsightly scars. An abscess in the region of the angle of the jaw may cause a very persistent trismus by infiltration into the masseter muscle. This condition may simulate tetanus. Infection into the blood stream is rare, but does occur and with fatal results at times. Acute edema and swelling of the tissues take place in connection with an alveolar abscess which at times is difficult to differentiate from Ludwig's angina. Abscesses of the upper jaw may drain into the palate and strip up the periosteum even to the attachment of the hard and soft palate. Tonsillitis, pharyngitis and other diseases of the naso-pharynx may result from prolonged dento-alveolar abscesses.

An acute abscess generally needs immediate surgery and as a rule, it is good practice to extract an infected pulpless tooth that is thought to be the cause and to secure immediate drainage. The old saying "wait till the swelling goes down before extraction" is, generally, a dangerous proceeding. If the abscess arises from a suppurative periodontal infection the question of extraction is not of an immediate nature as drainage may be obtained by opening the pockets

around the teeth and incision and drainage of the abscess itself. Careful radiographic examination should be made before any treatment is instituted if possible, so that the operator may know the exact condition of the teeth and bone enabling him to render intelligent and scientific treatment in the beginning of the trouble. In chronic cases, the infected teeth should be eliminated gradually depending upon the patient's general condition and local findings. If the abscess is draining freely, there is no special reason for immediate extraction and great care should be exercised in not removing too many infected teeth at one time. The possibility of producing a delayed but increased infection of the tissues that are of a low vitality must be considered. It is, at times, good practice to use an appropriate vaccine to raise the patient's general resistance before the removal of too many infected teeth is contemplated. The patient should be given a light nutritious diet and the bowels should be kept open. The patient should be kept at rest and the mouth as clean as possible.

Infections in the floor of the mouth and of the adjacent tissues of the neck are usually due to secondary infection from the throat or from some other part of the mouth and arise quite frequently from infected teeth. The infection travels through the lymphatics causing, at times, a serious lymphadenitis which may be acute or chronic. When the infection tends to spread directly thru the tissues a general cellulitis develops, as a rule, quite rapidly. An acute lymphadenitis may occur as a swelling in one or more lymph nodes, which swelling may disappear upon the removal or the quiescence of the initial focus, or it may progress to a larger area involving one or more nodes accompanied by rapid infiltration of the infection, *pain, and pain in swallowing, fever,* and subsequent suppuration. Recovery is usually uneventful after proper drainage has been established, provided that the surgeon has not delayed too long. Neglected cases will either rupture thru the skin or penetrate the deeper tissues and may even result in death. Treatment consists of an adequate incision and drainage and wet dressings of magnesium sulphate. In

chronic lymphadenitis resolution may be delayed in the non-suppurative form of the acute condition, and a chronic hyperplasia of the lymph nodes may take place. *Pyogenic* infection of the lymph nodes may be a predisposing factor of tuberculous adenitis, and the treatment is to remove all irritation and infection as soon as possible. If the enlargement of the lymph glands still persists after the removal of all apparent causes, and all systemic diseases have been eliminated from the picture, it is often good treatment to remove the diseased lymph nodes, if x-ray treatment does not give relief.

An *acute cellulitis* is characterized by a swelling of the cheek or floor of the mouth and occasionally in the side of the neck. The inflammatory process usually spreads rather rapidly and is accompanied by pain, fever and subsequent suppuration. The pain is most severe when the congested area breaks down and an acute abscess is formed. Early incision and drainage and the application of hot, wet packs to the part is indicated. If the swelling is above the mylohyoid muscle the incision can be made at times within the mouth, altho this procedure is not always successful. For any swelling of this character below the mylohyoid muscle, which can be felt under the mandible, external incision two fingers' breadth below the lower border of the mandible is indicated. It is well to insert a good sized soft rubber tube to keep the incision well opened.

Chronic cellulitis is a persistent, hard infiltration of the cellular tissue which resists all forms of treatment *at times,* and often lasts for months. It is more often located in the side of the neck. There is usually little or no suppuration and the systemic disturbances are very slight. The inflammation may subside after quite a period of time. Heat and electrotherapeutic methods seem to be of value in the treatment of this condition.

I would like to say a few words regarding that acute infection or cellulitis of the floor of the mouth known as *Ludwig's angina.* This infection is familiar to you all, but it is such a serious disease that I am sure you will not ob-

ject to my spending a few minutes in discussing some of its phases.

The condition is characterized by an *acute spreading infiltration* into the soft tissues of the floor of the mouth and neck, which often binds all the tissues involved into a hard boardlike mass. This infection is not very common, and is not always recognized when present but it often ends fatally when it does occur.

It starts, as a rule, in the sub-mandibular lymph glands of one side of the mouth, but occasionally it is bilateral. It is due most usually to a streptococcus infection that spreads rapidly to the lymphatic glands. Often a pure culture of the streptococcus may be found and less frequently the Staphylococcus aureus. The onset of the infection may result quite frequently from some injury or abrasion of the soft tissues within the mouth. I might say that in my experience it has developed as a sequela to dental or oral operations.

Thomas states that insignificant lesions in the mouth, infected teeth and tonsils are usually the primary foci leading to a lymphatic involvement. The initial swelling in the floor of the mouth or in the sub-mandibular lymph nodes may remain inactive for some days or weeks, but when it becomes acute the swelling spreads rapidly until within twelve to twenty-four hours the whole floor of the mouth and the anterior part of the neck is involved. The infection is deep seated and produces a very hard mass between the lower borders of the mandible. On account of the edema, the swelling is very sensitive and if the swelling extends toward the larynx there is often great difficulty in breathing and in swallowing. Within the mouth the induration may be felt in the floor of the mouth on one or both sides of the median line and the swelling may rise above the level of the teeth, forcing the tongue backward into the pharynx. At first the skin is pale and immovable and does not pit on pressure.

Constitutional disturbances are marked by a septic temperature, sweating, feeble pulse, general malaise and an

ashen color of the skin and worried or lack-luster facies. The infection usually develops into an abscess and there may be marked sloughing. Considerable *necrosis* of tissue may result. The disease may terminate in resolution, but this is rather rare. The prognosis is always grave. Of one hundred and six cases reported by Thomas, there were forty-three deaths. Among the complications are edema of the glottis, pneumonia and general sepsis. Blair states that death in from seven to twenty days is a frequent result in the untreated cases.

The chief point of diagnosis is the early intense progressive swelling involving the soft tissues having an extreme density. It simulates an exaggerated condition of a common adenitis. The treatment is free drainage, the tissues being opened widely and drainage tubes inserted and held in place often by means of a suture. Wet solutions of hypertonic solutions such as saturated solutions of magnesium sulphate or a 5 per cent solution of aluminum acetate are good. It is often good practice not to apply bandage over the dressing as the dressing should be changed very often, in some cases every hour or so and then again the bandage if applied, may interfere with drainage unless it is a very loose one. In making the incision great care should be exercised in not traumatizing the tissues, and the parts should be delicately dissected free until the infection is reached. Often very little, or no pus is obtained even by the most careful and extensive dissection. The character of the pus that is generally found in these infections is a thin dish water type. This occurs chiefly in the unfavorable cases.

Periostitis, osteitis, osteomyelitis and necrosis of the jaws are generally sequelæ to some form of dental or oral infection except when caused by syphilis or tuberculosis. Even in cases of lues and tuberculosis, the pyogenic bacteria ever present in the mouth play an important part.

Mercury, arsenic and phosphorus poisoning also in the past have contributed greatly to the above conditions,

either by their direct action or in lowering the resistance of the tissues to the bacteria of the mouth.

Local infections such as alveolar abscess, various forms of stomatitis and severe injuries are the chief causes, however, producing periostitis, osteomyelitis and necrosis of the jaws. In some cases of dento-alveolar abscesses, virulent pus under pressure may remain in the cancellous bone of the maxilla or mandible for some time before adequate drainage is established. I believe that most cases of osteomyelitis of the jaws have their beginning in cases where proper drainage has been delayed for some reason or other. When a virulent infection is well started in the cancellous bone it is difficult to treat the condition even by many incisions into the soft tissues; even tho all the offending teeth have been removed and good drainage has been established, the infection apparently runs its course and at times "watchful waiting" is about all the surgeon can do.

In children the infection in the bone spreads very rapidly thru the follicles of the erupting teeth and a great deal of damage is wrought in a very short space of time, especially if the child is suffering from a lowered resistance at the time. The infection is very inaccessible to treatment in the adult and in the child, but in the latter case the destruction of tissues is more rapid and the subsequent deformity is much more serious as the development of the jaws is greatly retarded by the infectious process. In many cases where a subperiosteal abscess is in process, early incision would relieve the pressure on the periosteum which in turn would prevent the stripping up of the periosteum that often causes death of bone. The use of local anesthesia introduced by means of the needle is contraindicated in most of these cases in making an incision obtaining drainage or in the extraction of teeth as there is grave danger of disseminating the infection further into the tissues. The use of gas-oxygen or ethyelene as an anesthetic is to be preferred where infection is present.

Bone necrosis is generally the end result of periostitis, osteitis and osteomyelitis of the jaws. The process may be

molecular in character, the necrosed bone being thrown off in small particles or dead bone, en masse, may occur and a sequestrum of considerable size be formed. The sequestrum should be handled carefully and in no instance should it be removed until it has become entirely free from its periosteal attachment. There are quite a few cases on record where the entire mandible has been removed in one or two large sequestra after many months of patient waiting on the part of the surgeon who has done nothing more than to institute adequate incisions and drainage. The use of the curet in these cases is condemned by most surgeons. Regeneration of bone is much more apt to occur in the mandible than in the maxillæ after extensive necrosis of the above bones. In some instances the entire ramus including the condyle, coronoid process, sigmoid notch and the body of the bone to the symphysis has regenerated completely after exfoliation of the part.

Infections of the bone may be divided clinically into two stages, namely the acute fulminating stage and the more chronic stage where the sequestrum is likely to form. In the earlier stage of osteitis it is difficult, at times, to differentiate the above disease from the acute dental abscess as severe pain, swelling and a temperature accompany both conditions. There is a localized bone infection in all dento-alveolar abscesses. If the process persists, a more extensive area of bone becomes involved in spite of adequate incision and drainage and an osteomyelitis will then generally follow. In such a case the swelling extends along the bone in the vestibule of the mouth and the teeth become loosened and pus often discharges from the gingivæ of the gums. The pus also travels downward and externally subperiosteally and there is generally a swelling along the inferior border of the mandible. The swelling is apt to perforate the skin if early incisions are not made to relieve the tension of the pus under pressure.

Exposed bone may be seen or felt with a probe thru small sinuses in the gum that develop quite rapidly in some cases. Necrotic bone resulting from this process, at first, is firmly attached but may become loosened and thrown off

spontaneously in from six to eight weeks. The entire progress of the disease depends upon the virulence of the infection, the resistance of the patient to the infection and the type of treatment given. Some of these cases develop with amazing rapidity and a great amount of destruction is wrought especially in children whose resistance to dental infections is not good. Occasionally a pathological fracture of the mandible will take place, but the involucrum which forms generally acts as a splint and helps to preserve the continuity of the bone. In the acute cases the radiographic examination does not afford us much information as little change has taken place in the density of the osseous tissue. In the chronic stages, however, the x-ray is invaluable in telling us the extent of the involvement, new bone formation, condition of the teeth, etc.

In the treatment of all infections of the mouth it is of greatest importance that early incision and drainage be instituted. In acute bone infections the cause of the trouble is generally a pulpless tooth which should be removed as soon as possible, especially in children. The writer fully believes that every infected tooth in a child should be extracted long before it has had a chance to cause an involvement of the bone, whether the diseased tooth is a deciduous one or not. The question of saving infected teeth at this time should not be considered and I believe that in this the medical and dental professions are not in complete accord. Abscesses of the upper jaw can sometimes be drained adequately by incisions within the mouth, however, most abscesses in the mandible are best drained by free incisions externally under the lower border of the mandible. Diseased bone should never be removed until completely sequestrated, as this procedure interferes greatly with the regeneration of bone and may cause distortion of the face, mal-occlusion of the teeth and non-union of the remaining portions of the bone and in children, lack of development of the jaws.

(A number of lantern slides were thrown on the screen to illustrate the clinical side of the diseases discussed by the speaker).

BOOK REVIEWS

MacCallum's Halsted*

The fact that the first edition of this book is well nigh exhausted bespeaks its solid merit. Dr. MacCallum tells a plain, unvarnished tale, permitting his subject to be himself, without embellishment, and all whom Halsted honored with his friendship will agree that this is the man, as we knew him. The man, in this case, happened to be the most original surgical thinker this country has produced, the reviver of Hunterian or physiological (experimental) surgery, and, like Hunter, one of those heroes of our profession who ruined his health by scientific experimentation on himself. This happened in his youth, and the pity of it was that it turned a happy, likeable athlete, brimming with *joie de vivre*, into a cautelous, reserved, reticent recluse of aristocratic mien, fertile in sardonic defensive reactions, meticulous as to the niceties of social contact, a master of sarcasm, his own severest critic, and when East winds were braw, no doubt, exceeding sad and sore at heart. Like Brahms, Halsted could make himself very disagreeable over "the foolish face of praise," masking a kindly nature under an ambiguous exterior, and with an unmistakeable strain of Scotch contrariness in his composition, remained, even in the married state, a bit of a bachelor. During an acquaintance of many years, I never heard him make the slightest casual reference to his own achievements, but there were jocund, convivial moments when the real man shone forth as a very royal sort, with no repining over the *quantum mutatus ab illo*. His wife, daughter of a Confederate officer who was killed in battle and of the witty Sally Baxter whom Thackeray so much admired,

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**William Stewart Halsted, Surgeon.* By W. G. MacCullum, XVII, 241 pp., 18 pl., 1 ch. 8°. Baltimore, The Johns Hopkins Press, 1930.

appears as an archetypal Anglo-Saxon, all character, courage and common sense, with an immense humorous perception of the incongruities of human existence. She was devoted to her husband, yet writes to him as follows, addressing him as "Dear Wm.":

"I am glad that you are enjoying your French lessons. To me your disposal of your summers seems absurd. Instead of going away from stuffy, dirty cities where you have been living all winter you just go and immure yourself in another buggy place. If you must study French why can you not take it somewhere besides a large city. Still, I suppose it is the amusement you want and change, not particularly French. For I do not feel that what you have learned is of any use to you. . . . The ram is on its annual strike and I am travelling pretty steadily to keep it going just for a little until the new washers come. I started to instal the dam ram this A.M. but found a busted pipe as usual."

Halsted had his clothes made by "the best tailor in London," his shoes and shirts in Paris, where the latter were sent in batches to be laundered, and was so conscientious as to the details of a dinner party (ironing the table-cloth on the table and making the coffee himself) that Mrs. Halsted ultimately declined to have any more of them. She was an expert horsewoman, who wrote to her husband that "a person who does not ride never can understand how one who can ride does it as naturally as they breathe. You never understood either how crazy I always was to get out and away."

It was perhaps the obstinate Scotch strain in Halsted's make-up which made him original, catalyzing him to deeds of derring-do in fields not ordinarily essayed by American surgeons. Only an essential pathologist could make his achievement so understandable as does his present biographer. Halsted was the greatest modern master of perfect wound-healing, discovered and practised the principles of conduction and infiltration anæsthesia (1885), was the first to perform refusion (centripetal transfusion, 1884), to ligate the subclavian in its first portion (1891), to excise Vater's ampulla (1916) and did much for the physiology of the parathyroid gland by experimental auto- and iso-transplantations (1909), as also for the surgical treatment

of cancer of the breast (1889), and hernia (1889-93). Five months before his death, he demonstrated to the National Academy of Sciences that entire limbs can be transplanted without suturing the blood-vessels (1922). His other innovations, such as gutta percha and silver foil dressings (1880-96) or rubber gloves (1890), his experiments on the thyroid gland (1888) and his feats in the treatment of aortic aneurism (1905) and in intestinal surgery (bulk-head and blind-end anastomoses, 1910-20) are the kind of thing that every surgeon does *en passant*. To certain fundamental problems, neatly tabulated on pp. 237-239, Halsted recurred at intervals throughout his entire professional life. If, as MacCallum puts it, they remained "the same old problems," the phrase connotes the wisdom of limiting one's objectives and directives on a terrain beset with attractive by-paths which are sometimes delusive blind alleys. In surgery, Halsted was *tenax propositi*, using dilettante interests as his play-ground. So too, in a compact volume of maximum condensation-ratio, his biographer yet finds space and time for an occasional charming interlude, such as the paragraphs contrasting the simple social pleasures of old Baltimore with the changes after the fire of 1904, in consequence of which "you never see anyone you know except by arrangement." The prospective second edition will need only two things: more piquant letters from Sally Baxter and Caroline Halsted, and a serviceable index. There are eight portraits of Halsted, but the only good one of the later period is that opposite p. 178, which might well replace the impressionistic blur of the frontispiece. The volume is prefaced by a graceful and informing summary, written, as usual, at the last moment by Professor William H. Welch.

F. H. GARRISON.

Two Notable Source-Books*

These volumes present material which is indispensable for the historical study of two of the three basic disciplines which go to the making of the science and art of medicine. The first was designed as a pendant to Professor Long's History of Pathology (1928): the other will subserve the same end with reference to a Primer of the History of Physiology by Professor Fulton, just out (1931). It is obvious that these two disciplines, physiology and pathology, not only supplement each other but also cover material far more interesting, stimulating and informing to the student and the general practitioner than would be the case with a source-book of anatomy. One can fancy the weariful uphill progress of the Sisyphus who would essay the marginal references in the vest-pocket *Historia anatomiae* of Bauhinus (1597), the foot-notes in Sprengel and the multifarious citations available in the actual texts, from Galen to Leonardo, from Vesalius to Gray, Henle and Hyrtl, not to mention original discoveries published in 19th century periodicals. Such a compilation must needs be a stodgy, unreadable affair, if complete, and failing completeness, would be amateurish and valueless. The best of the early history of anatomy, moreover, is in the hand-drawings, as Choulant divined, and for the post-Vesalian texts, apart from the important philologic studies of Hyrtl, one might make a special case of the general equation of Goethe: *Die Geschichte der Anatomie ist die Anatomie selber.* With physiology and pathology, the case is different. We emerge from the dry statics of structure into the dynamics of function and deflected function and here we are best instructed and derive salutary stimulation from the higher reaches of endeavor, passing, Alpine-wise, from peak to peak. From England, incidentally, came two

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**Selected Readings in Pathology from Hippocrates to Virchow.* Edited by Esmond R. Long. XIV (1 l.), 301 pp., 4 l., 25 pl. 8°, Springfield, Ill.; Baltimore, Md., Charles C. Thomas, 1930.

Selected Readings in Physiology. Edited by John Farquhar Fulton, Springfield, Ill., Baltimore, Md., Charles C. Thomas, 1930.

of the most inspiring books on the history of physiology—Sir Michael Foster's Denver lectures (1901) and Stirling's *Some Apostles of Physiology* (1902) and both are virtual source-books of epoch-making discoveries, inventions and experiments. A third source-book, the splendid contribution of Professor Neuburger (1897) tells us just why most of the physiology of the nervous system before the days of Galvani, Nobili and Matteucci had to be scrapped.

Professor Long's volume is, in the nature of things, illustrative, an anthology rather than a source-book, since most protocols of post-mortems, those of Bonetus or Boerhaave for instance, merely peg out additive data rather than epoch-making advances; and it is better to get the quaint literary flavor of Lancisi or Morgagni from such liberal citations as the editor gives than to bewilder the mind with the impossible yet essential alternative, the inclusion of the entire texts of these great contributions. In the history of pathology, as of anatomy, Tennyson's line is still apposite—

"Science moves but slowly, slowly, creeping on from point to point,"

the tempo being that of the sluggish fugue typifying "science" in Richard Strauss's *Zarathustra*. Professor Fulton, on the other hand occupies a terrain on which recent advances have been steady, step-wise and sometimes rapid, almost synchronous, in fact, with pace-making advances in physics and chemistry. With one or two singular exceptions, most of his excerpts are, therefore, basic and authoritative. The high spots in Long's book are Rhazes (small-pox), Saliceto (renal disease), Fernelius (renal calculus), Wepfer (apoplexy), Lancisi (fatal disorders of circulation), John Hunter (inflammation, syphilis), Hodgson (aneurysm), Laennec (phthisis), Bright (nephritis), Louis (typhoid fever), Hodgkin (lymphadenoma), Corrigan (aortic insufficiency), Cruveilhier (phlebitis), Andral (diseases of the blood), Rokitansky (congenital cardiac malformations), Addison (suprarenal disease) and Virchow (embolism, cellular pathology). Regrettable omissions are Paracelsus on gout, calculus and

goitre, the data of Vieussens and Lancisi on valvular disease of the heart, Bontius and Tulp on beri beri, Walter on peritonitis (1785), J. Z. Platner on tuberculous spine (1744), William Hunter on arterio-venous aneurysm (1757-62), Mestivier on appendicitis (1759), Whytt on meningitis (1788), Werlhof on purpura hæmorrhagica (1775), Wollaston on gout and calculus (1797) *et quibusdam aliis,* in lieu of material patently clinical or diagnostic. In Fulton, one misses the physiologic experiments of Vesalius, the remarkable contributions of La Place and Lagrange to the physiology of respiration, the experiments of Walæus and Stannius, Gaskell on the vagus nerve, Langley on the autonomic system, Kölliker on veratrinized muscle and the essential findings of Ludwig and Claude Bernard; while van't Hoff on osmosis and Arrhenius on the nature of solution are rather property of physical chemistry, and Captain Cook on scurvy is a phase of naval hygiene. Beyond this point, it seems ungracious to look such superlative gift-horses in the mouth. The wealth of illustrations and of facsimile reproductions of title-pages and texts gives to both volumes the charm of Stirling's "Apostles" and the later editions of Bayliss's Physiology. Over the page of the dedication of Professor Fulton's book, we read that "men choose art for the business of their lives, and labor at it alone and without pudding or praise, for the sake of these moments which have happened to other artists and may happen to them. And the world with all its indifference to art yet does value these moments and preserves with a religious awe the works in which they occur." Some of these moments of unique achievement have even happened to scientific men and there would be no harm in including more of them in subsequent editions of these volumes.

F. H. Garrison.

REMINISCENCES OF DR. S. WEIR MITCHELL*

IRVING WILSON VOORHEES

For two decades preceding his death Doctor Mitchell was a living landmark during the summer season at Bar Harbor. The oldest inhabitants of Mt. Desert Island, and many of the younger inhabitants as well, still speak of him with tears in their eyes; for he was very generally beloved.

Since my college days he had always appealed to me in a double sense—as a brilliant author of fiction, and as an authority on neurology. Both of these fields attracted my growing mind so strongly that a choice between them was by no means easy, when considering my life work. This choice Doctor Mitchell helped me to make, quoting in support of his argument the well known aphorism, that "literature is a good staff but a poor crutch." It was not difficult, therefore, to decide in favor of medicine.

Upon a beautiful morning in August, 1913, I was invited to spend some time with him in his library at Bar Harbor. When I entered he was sitting at his desk, surrounded by a pile of books and manuscripts. He had grown very deaf and did not hear my approach, so I stood for a moment near his chair admiring the massive head, covered with thick grey hair, while he kept on busily writing. Finally I stepped around where he might see me, and he arose quickly with a friendly greeting.

Out through the open window beyond the trellised porch and the green lawn shone the wonderful little harbor in the morning light, with its wealth of pleasure craft.

"What an ideal spot for study," I said, "how much you must enjoy it here!"

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*Read before the Section of Historical and Cultural Medicine, November 12, 1930.

"Well," he replied, "I used to enjoy it immensely but this season they have spoiled it all by bringing in the shrieking automobile. Our roads are being ruined by a crowd of undesirable holiday makers who flock here over week-ends and are driving the liverymen out of business." Then he asked me if as an ear specialist I knew of anything which might improve his hearing. He had just read of a new device described in the *Illustrated London News,* and he gave me a letter, received from the manufacturers in reply to his inquiry, asking me to look the matter up for him. This was done but we could not find that the apparatus had any value, and he was so advised.

Then I asked him how he had managed to produce such a large literary output when he was so constantly busied in his profession; for he was first of all a physician, literature being merely a hobby.

"Well, by keeping pretty studiously at it," he answered. "But you have always managed to keep up your medical work to such a high standard; how did you do that?"

"Yes, I have tried, but of course in these days I leave all the laborious work to my son, Doctor J. K. Mitchell, and I attend chiefly to consultation cases. Most of my literary work has been done during the summer here in Bar Harbor. It was undertaken at first as a kind of relief from idleness and I was rather surprised to find how well I could work up here."

"But you must be frequently interrupted," I said.

"Oh, well, that does not trouble me. I find no difficulty in taking up my writing just where I left off. Interruptions interfere with my thread of thought hardly at all. Besides, I often find out a good many things from people who are good enough to come and see me, and this leads me to ask a question: 'Do you know when the weathercock first came into use?' "

I had to admit that I did not.

"Well, I am sorry, for I have written a poem dealing with a certain date in history and my wife objects because she says my allusion to the weather vane is wrong, since it was invented long after the time I have made use of it." He laughed heartily at this and then the talk turned to his novels.

I told him that Doctor Henry van Dyke once said to me that he considered "Hugh Wynne" the great American novel.

"Yes," he said, "'Hugh' is pretty fair but my best is 'Constance Trescott.' In that book you will find the fullest report of a medical consultation in all literature."

Since this novel was written when Dr. Mitchell was seventy-five years of age, it is indeed curious that it is often regarded as his strongest work of fiction. I reminded him that of all his shorter stories I considered "The Autobiography of a Quack" his best.

"That interests me," he replied, "for I was more generally criticized for that story than for anything else I ever did. The Homeopaths in particular did not like it and many of them took it as a personal affront. I received scores of letters scolding me soundly for it."

We then walked over to his bookshelves and he showed me several of his favorite bindings, including gifts of volumes from literary contemporaries. When he took down a volume from his old friend Oliver Wendell Holmes, I told him how disappointed the entire medical profession was that he was unable to be present at the Holmes Centenary Celebration at the New York Academy of Medicine in 1909. As chairman of the committee appointed by the New York County Medical Society, it was my duty to arrange for a special meeting of the medical men of New York in commemoration of Holmes' birth. Knowing the close friendship which had existed between Mitchell and Holmes, I wrote asking Doctor Mitchell to be present and favor us with personal reminiscences of the Autocrat. He replied:

In Camp, Cascapedia Club, Grand Cascapedia,
Quebec, Canada,
June 19, 1909.

Dear Doctor Voorhees:

I have set myself resolutely to decline all engagements which would oblige me to leave Bar Harbor until the end of October and in November I am deeply pledged. Moreover, I have contributed to the lives and published letters of Holmes, all I had of interest; you see why I must decline your honoring invitation and believe me it is with regret.

Yours truly,

S. Weir Mitchell.

On the opposite page Doctor Mitchell, as a sort of balm for a possible wound, penned a paragraph which is one of the most delightful personal touches in my possession. It reads:

"As our paper is running out and I must save the last sheets for two or three letters which cannot wait, pray ask Doctor Houghton" (President of the New York County Medical Society at that time) "to consider this, with my apologies, as answering him.—S. W. M."

As the luncheon hour was approaching I turned to say goodbye. Putting his hand upon my shoulder, he said: "Well, my young friend, I am sorry you are leaving this beautiful spot so soon, but,"—in an almost quavering voice—"I may have to leave it myself before very long. Goodbye." As a matter of fact, he lived only about five months longer and this was the last time I ever saw him alive.

Doctor Mitchell, like all other famous men, had a remarkable personality. His magnetism was tremendous and everyone seemed anxious to shine in the reflected light of his presence. It was his custom to leave his beautiful home in Philadelphia about June first of each year and go on a fishing trip to Canada, usually to Cascapedia Bay. During the month of June salmon fishing is good in Canada and Doctor Mitchell was an expert fisherman. He took pride in sending a specimen of his catch to various friends, frequently enclosing a card, written in his own hand, stating the place of capture and the weight of the fish. Following this month or so of fishing, Doctor Mitchell went to his summer home, "Far Niente," at Bar Harbor,

where most of his reading and writing could be carried out undisturbed by professional duties. He was a great favorite in the summer colony, and was frequently called on to make speeches at the Temple of Art, where public exhibitions and "benefits" of various kinds were held, and not infrequently he was a guest of honor at one or other of the summer homes of the wealthy residents.

It is surprising what a vast amount of work he could turn off without apparent effort. Time for him seemed to have no limits, and, when in Philadelphia in attendance on patients at his office, he opened the door, he seemed to sense the errands of those in his reception room; for not only did patients foregather there, but also men and women distinguished in literary and other fields. He enjoyed his friends and was always annoyed if called out of the house when receiving them.

Doctor Mitchell was the third of nine children. He was named for Silas Weir, a prominent Philadelphian and friend of his father. As a student at the University of Pennsylvania in the class of 1848, his record was brilliant but he had to give up before graduating because of a threatened tuberculosis. Eighteen months of his long life were spent on beds of sickness, but in his latter days his health was excellent, almost exuberant, and he felt himself growing stronger and stronger every year.

He had certain peculiarities, one of which was his aversion to dinners and anniversaries. Another was his dislike of newspapers and reporters. He had little respect for what he called "newspaper English."

"To the reporter," he said, "a dinner is always a banquet, a fire a conflagration, an investigation a probe and any unusual welcome an ovation."

Ellis P. Oberholtzer, in his personal memories of Weir Mitchell, speaks of Doctor Mitchell's love of the Franklin Inn Club, where he spent many happy hours during his latter days. It was an absolute rule that affairs at the club be kept out of the newspapers and the annual dinner

was always a closed night. On one of these occasions the doings came to the knowledge of a reporter who published the "story" in a daily paper, to the great discomfiture of all the members, many of whom were prominent literary men.

"Do you wonder that I loathe the creatures?" said Doctor Mitchell.

The reporter wrote a letter of explanation, saying that the whole world was his prey and that he always got what he was sent out to get, regardless of the feelings of others.

"The ethics of a rag picker!" exclaimed Doctor Mitchell.

But, of course, Doctor Mitchell being very human could not be inattentive to what the newspapers said of him. He read their reviews of his books, although he paid little attention to criticisms unless they were unfair, then he would write, complaining of his treatment.

Doctor Mitchell volunteered for service in the great Civil War and had many unusual experiences. Describing the excitement upon the declaration of war and lack of preparedness, he said in an address delivered before the Physicians' Club of Chicago, February 25, 1913:

"The ancient guild of physicians alone remained an unbroken organization—the offspring of science and charity, faithful to a creed centuries old when Christ was born. In hospitals and on the field of battle where the surgeon ruled there was the truce of God, * * * the wounded man ceased to be an enemy."

Even in those days physicians knew perfectly well that pneumonia and bronchitis did best in tents or out of doors, no matter how bad the weather, and in support of this fact, Doctor Mitchell wrote in 1872 a little paper on *Camp Cure,* also an article on *Hospital Gangrene.*

"It was found," he says, "that the injured men did badly in houses, better in barns and best of all in tents. * * * A great many of us did not taste coffee for two or three years. Tea leaves, once used, were sold and greedily bought up.

How they were used again I do not know, but above all the other available waste material in value were egg shells. The fact is that the egg shell is a very pure form of carbonate of lime and when it is calcined and ground up it constitutes the base of all the finest face powders which the ladies employ."

The salvage was so successful that at the close of the war about $80,000.00 was turned in from the hospitals to the Federal treasury, and the Surgeon General was allowed to use this money in the purchase of the great library of medicine now in Washington.

Describing the great conflict under fire, Doctor Mitchell speaks of Doctor John S. Billings, who operated back of Round Top at Gettysburg and was finally forced to retire under a rain of bullets. "In one case known to me," he says, "a man on the operating table was killed by a bullet while his wounds were being dressed. It was a noble test, of course; nothing, I think could be greater."

"One often reads in novels and sometimes in history of bayonet charges of cold steel. I never saw a bayonet wound, and of 25,000 wounds in Grant's battles, including the hand-to-hand struggle of the Bloody Angle, there were in all fourteen bayonet wounds. There were probably as many men severely kicked by mules." Apparently in the World War conditions were quite different, for the bayonet was one of the most dreadful of weapons.

Speaking of the value of women as nurses. "There were," he says, "women like the Schuylers, the Lowells and Miss Wormly, of whom I think with grateful remembrance. When we were in the neighborhood of great towns we had many volunteer women nurses. Some were terribly earnest, utterly ignorant and quite incapable of discipline. Others, if more efficient, were not punctual and came and went as they pleased. A large proportion were early credited in the papers for patriotic services and were seeking that notoriety which is the motive force of so many of the aspirations—and, shall I say, of the exasperations—of our own unrestful days."

Early in the war all captured surgeons and a detail of those who stayed with the wounded men were released, but in some cases there was needless detention for the sake of retaliation. In 1865 a General Order set free all imprisoned surgeons.

One of the curious experiences in war was the phenomenon of lost limbs—what Doctor Mitchell called "phantom limbs," in which men who had lost an arm or a leg felt sensation as if the hand or foot were still present. "While this subject was occupying my mind," said Doctor Mitchell, "a friend came in one evening and in our talk said, 'How much of a man would have to be lost in order that he should lose any portion of his sense of individuality?' This odd remark haunted me, and after he left I sat up most of the night manufacturing my first story, 'The Case of George Dedlow,' related by himself. In this tale my man had lost all four limbs. I left this tale in the hands of a delightful lady, now long dead, the sister of Horace Howard Furness. Then I forgot it. Doctor Furness, her father, much amused, sent it to Mr. Hale, Editor of the *Atlantic Monthly*. To my surprise I received, about three months afterwards, a proof and a welcome check for $85.00—my first literary earnings and certainly not a contribution on my part, because I had nothing to do with the disposal of the paper and had not authorized its being put into print. This story has had a dreadful number of successors—the product of my lengthening summer leisure. The unfortunate George Dedlow's sad account of himself proved so convincing that people raised money to help him and visited the Stump Hospital to see him. If I may judge it by one of its effects, George Dedlow must have seemed very real. At the close of my story he—a limbless torso—is carried to a spiritualist meeting, where the spirits call up his lost legs and he capers about for a glorious minute. The spiritualist journals seized on this as a new proof of the verity of their belief. Imagine that!"

Detailing further his war experiences, which are rather too harrowing for the perusal of the general reader, Doctor

Mitchell stated truthfully that "countless statues commemorate in Washington and elsewhere the popular heroes. Statues of generals are in every town, some of them memorials of men it were wiser to forget, some of whom history will judge severely. Every village has its statue to the private soldier. There is not a state or a national monument to a surgeon. At Gettysburg every battery site is marked with a recording tablet; every general who fell, Union or Confederate, is remembered in bronze or marble; but what of the surgeon who died? Nothing!"

Doctor Mitchell was in every sense a true and learned physician. He revered and respected the science and art of medicine, and strove in every way to extend its boundaries. It is not known to every one that he was an excellent poet as well as a gifted writer of beautiful prose. One of his poems entitled "The Goddess of Medicine" deserves quoting:

Fair heritress of every human hope,
Rich with the marvels of time's widening scope,
However high may rise thy soaring wing,
Whatever change thy fuller days may bring,
Our ancient lesson will be ever new;
That priceless lesson will be ever true;
Time did not teach it; time will change it not;
This, this shall last though all our lore's forgot,
To give what none can measure, none can weigh,
Simply to go where honor points the way;
To face unquestioning the fever's breath,
The hundred shadows of the vale of death;
To bear Christ's message through the battle's rage,
The yellow plague, the leper's island cage,
And with our noblest "well to understand
The poor man's call as only God's command."
Ay, under every century's changing sky,
Shall the Greek master's triple signal fly—
Faith, honor, duty—duty calmly done,
That shouts no self-praise o'er a victory won;
One bugle note our only battle call,
One single watchword, Duty—That is all.

ANNOUNCEMENT OF AWARD OF ACADEMY MEDAL

Upon the recommendation of the Medal Committee and with the approval of the Council the Medal of The New York Academy of Medicine is awarded to David Marine, a Fellow of the Academy—physician, pathologist, teacher and scientist, who pursued a series of researches on the nature of the internal secretions, and in particular, on the thyroid gland; in finally demonstrating the relationship of iodine to the structure of the thyroid gland; whose researches have made possible the use of sodium iodide as a preventive of goitre, first applied to school children generally in the Middle West, and later as iodized salt in the goitre areas, particularly in the Middle West and Switzerland, with a most encouraging diminution in the amount of thyroid disease.

EXTRACT FROM REPORT OF COMMITTEE ON PROFESSIONAL STANDARDS

A regular meeting of the Committee on Professional Standards was held on October 23, 1930. At this meeting Dr. Shirley W. Wynne asked permission to appear and be heard. This request was granted.

Dr. Wynne made a complete statement in regard to the use of the testimonial which he had authorized in the early summer of 1930. He also submitted documentary evidence which showed that he received no compensation for the use of this testimonial.

After some discussion Dr. Wynne was asked to submit a complete statement in writing which was subsequently received and given careful consideration at a second meeting of the Committee on Professional Standards, held on November 24th, 1930.

The Committee on Professional Standards reported to the Council on November 26th, 1930, the result of their deliberations in regard to Dr. Shirley W. Wynne. The Council approved the report and referred the report back to the Committee on Professional Standards for the preparation of a summary statement which might be published in the Bulletin. The Committee on Professional Standards report that the following is an accurate summary of Dr. Shirley W. Wynne's statement:

1. That advertising agents were habitually going too far in making extravagant and fraudulent claims in the field of dentifrices and cosmetics.

2. That the Bureau of Food and Drugs of the New York City Health Department was able to control such adver-

tisements only when the product advertised contained substances deleterious to health.

3. That the Federal Government had effected some improvement by requiring a change in wording but that deceptive wording remained.

4. That with the cooperation of some broadcasting stations, Dr. Wynne had been able to control certain advertisements on the radio.

5. That he had not found any method of controlling various toothpaste advertisements.

6. That the possibility of counter advertising had been suggested to him but he did not have control of funds to carry on an activity of this kind.

7. That it was suggested to him that by aiding recognized, commercial concerns which did not engage in extravagant or fraudulent advertising, he might exert a useful influence and a control on the character of the general advertising in that particular field.

8. That he had granted the use of a testimonial for the purpose just stated.

9. That the testimonial as first used pointed out the simple fact that a toothpaste was never more than a cleansing agent.

10. That a later testimonial stated that the particular toothpaste in question was a better cleansing agent than others which statement was based on evidence submitted to him by chemists in various laboratories.

11. That the testimonial given did not have the complete effect hoped for.

12. That the method was distasteful to him, and that he had granted the testimonial solely for the purpose of protecting the public.

13. That he received no emolument for the use of the testimonial.

14. That the use of the testimonial had been discontinued at his request.

15. That if a similar occasion again arose he would consult the Academy and would ask the Academy to cooperate with him in devising a method which would safeguard the health of the public from fraudulent advertising.

In the report of the Committee on Professional Standards to the Council at its meeting on November 26th, 1930, the Committee stated that it had inquired into the case of Dr. Shirley W. Wynne and that Dr. Wynne has discontinued the use of the testimonial. The Committee recommended to the Council that the same course be followed as was taken in similar cases, namely, that the Secretary of the Academy be instructed to write to Dr. Wynne advising him of the regulation of the Council pertaining to testimonials and that it is still the opinion of the Council that it is to the best interest of the medical profession for Fellows of the Academy not to grant testimonials in any form, shape or manner.

SAMUEL W. LAMBERT, *Chairman,*
EDWIN BEER
A. BENSON CANNON
ALFRED T. OSGOOD
WILLIAM B. PARSONS, JR.
BERNARD SAMUELS
ARTHUR M. WRIGHT
HARRY ARANOW
LEO KESSEL
JOHN A. HARTWELL
LINSLY R. WILLIAMS

Report of Committee on Professional Standards for October, adopted at meeting of Council on November 26th, 1930.

The above extract approved by Council at its meeting on December 17th, 1930 and ordered printed in Academy Bulletin.

LIBRARY NOTES

Death of the Rev. J. H. Judson

We regret to say that the Rev. J. H. Judson died on the fifth of December after a brief illness. He was born in 1852 on a farm in Oakland County, close to Pontiac, Michigan, and thus was seventy-nine years of age. He was educated at a country school, later at Pontiac and at the Academy of Knox College, Galesburg, Illinois, with one year at the College itself. After that he went through Hamilton College, Clinton, New York, and finally studied at the Union Seminary here. He graduated with the class of 1879. He determined to become a missionary, and before leaving for China, married Miss Filley of Windsor, Conn. She, one son (a doctor) and two daughters, survive him. The Presbyterian Board of Foreign Missions sent Mr. Judson out to Hangchow, and he spent forty-five years doing excellent work in China where he built up a small boarding school into the Hangchow Christian College and organized a trade school in connection with it. Last Christmas Mr. Judson wrote an interesting and amusing account of his life and work; with his characteristic humour he called it "From the Year One to Seventy-eight." He retired from mission work in 1923 and came to New York in 1925.

After years of work continued inactivity became irksome to Mr. Judson. We were looking for someone to occupy a position which was created by reason of our more spacious quarters in the new building. We are grateful to Mr. Felix Wesstrom for telling us of Mr. Judson. He came first of all as a full-time, but later, owing to decreasing bodily strength, as a half-time, worker on the staff of the Library.

Sitting at his desk at the portals of the Library his duties were to see that readers registered their names and also that on leaving they took with them only those books which they were entitled to. We had doubts whether this innovation could be brought about, but thanks to Mr. Judson's tact and good humour, Fellows and other readers soon fell into line. Many loved to chat with him when they passed his desk, on obtaining paper and pencils from him, or when paying for their telephone calls. All this was not enough for such an active man, and soon Mr. Judson began to open all the mail other than letters and to cut pages of magazines. Often he would come to one of us seeking more to do, so we would provide him with a game of solitaire, that of placing new catalogue cards in strict alphabetical order.

He never seemed to have grown up, and his work was done with a boyish enthusiasm yet combined with a stern sense of duty. His smile and his ways, his never flagging interest and cheerfulness soon endeared him to us all. And who will forget the preserved ginger or peppermints he gave us! He was never prouder than when he showed some friends of his old China days about the Library and introduced them to the staff. Through his good offices another retired missionary, the Rev. Dr. Hayes, shared his work for a year or more.

Mr. Judson's courage was remarkable, as for several years he knew that he might die at any moment, yet he quite rightly refused to give up, and kept at his work. Only a short time ago after one of his serious heart attacks he remarked with an eloquent gesture of his hand that he must "keep the even tenor of his way" avoiding unnecessary exertion, and when the Librarian seeing him start up with a bundle of books, made a similar sign, he would subside into his chair with a laugh. We all feel the better for his days with us and his example. No one has been more loyal or devoted to the Academy.

ARCHIBALD MALLOCH

Gifts to the Academy

A little Medicine Case

Miss Mildred Sawyer has very kindly given the Academy a small case for medicines. The box is of oak, veneered with mahogany (?), is bound and ornamented with wrought ironwork and has a small iron handle on top. It is a cube measuring six and five-eighths inches along each edge, except that the top shows a slight convexity from front to back. When the cover is lifted back, sixteen receptacles for bottles, four to a row, are seen, and only three of these are empty now. With the exception of a large drawer at the bottom which projects out almost to the front, the box is divided from side to side into two, the fore part being again divided from before backwards. Both quarters with space for four bottles, are hinged to the side of the box so that they can be made to swing out about a vertical axis like doors. Each quarter has below its group of bottles a tiny drawer which is concealed when the quarters are closed. The front of the large drawer, spoken of above, is also hidden when the case is closed; while the top of the drawer forms a little shelf on which to mix powders. When the case is open, two other shallow drawers are found in the back section. The lower one extends under the very back row of bottles (which are, comparatively speaking, large) and the upper one merely under the little cylindrical pewter pots which are found in the second last row. The cover is lined with paper decorated with a coat-of-arms in gold, red and black. The remains of a crown and shield supported by the remains of two eagles can be dimly seen. It might be the coat-of-arms of Austria, but the shield does not seem to be the same.

The little bottles have screw tops of pewter and show the punty (or pontil) mark on their bottoms where they were broken off from the glass-blower's iron rod. Only one of these bears a chemist's label, and this reads "Fougeron Pharmacien, Rue Bannier. N° 48 à Orléans." The bottle once contained oil of sweet almonds and were there any

left now we should probably anoint our leather bindings with it.

The names of some of the remedies sound strangely in our ears, "Eau Vulnéraire" was obtained by distilling the flowers of sixteen plants. Those who are interested can find the method of preparation in Littré and Robin's *Dictionnaire de Médecine* (Paris, 1865). "Essence De Grerofle," probably a mistake for "Essence de Gérofle," is nothing less or more than the (essential) oil of cloves. "Laudanum Liquide" of another bottle sometimes is qualified by the phrase "de Sydenham." Osler used to say: "Look what Sydenham owed to opium." We can add: "Look what France owed to Sydenham." "Eau de Fleur D'Oranges Double" has a generous sound. "Poudre Capitale" is still found in the cylindrical pewter receptacle. This was the same as "Pulvis Cephalicus" and in English was called a "Cephalic Powder." It contained the leaves of Asarabacca (hazelwort), Betony and Marjoram in equal parts and sometimes an equal amount of Muguet (mugget or lily-of-the-valley). The old English pharmacopoeias call it a "sternutatory"—please sneeze it as pronounced. We might refer to it as a snuff. The French also used the synonym, "Tabac Céphalique." The powder still retains a rather pleasant odour. Perhaps we should treat colds with it. In another little pewter pot with a screw top is some "Confection de Hyacinth."

"Theriaque," a still sticky, gummy mess of spicy odour, contained in another pewter pot, is, of course, theriac, one of the most famous remedies of all time. It is from the Greek word, theriaca, meaning wild or venomous beast, as it cured those who were bitten. The formula used for centuries was that found in the writings of Galen, and even Galen had it from the Greek verse of Nero's physician, Andromachus, or his son. So that particular form was known as Theriaca Andromachi or Venice Treacle, and was used for about 1800 years. One of the most notable theriacs contained one hundred and twenty-seven ingredients, while *T. diatessaron* or "Theriaque des Pauvres" had only five! Pliny took it that in devising such a complicated

compound, his contemporary Andromachus was simply trying to "show off." Old medical books used to speak of the "Four Officinal Capitals" which included Mithridatium (after King Mithridates VI of Pontus), its "improved" form Venice Treacle, Philonium, and Diascordium.

"Vinaigre des 4 Voleurs" is on the label of another bottle with pewter stopper. The vinegar of the four thieves has now dried up. It derived its name from the fact that this "vinaigre antiseptique" rendered four thieves immune to the disease when they robbed the bodies of victims of the plague at Marseilles in 1720-21. It was one of the liquids in the vinaigrette heads of canes which doctors carried and sniffed so vigorously when they entered the sick-room. Such canes were called pomander sticks.

In one of the small drawers is a piece of blue paper which is glued to the back edge of the drawer so that it forms a lining. In the centre of this lining is pasted a white paper label with printed ornamental borders and the words, "Orillard Apothicaire, A pithiviers." Pithiviers is a town north-east of Orleans. Printed by hand on the label are the words "Thé Hayswain." The second word makes one think of an Anglo-Saxon, perhaps of a doctor, and certainly of one who did not have a town practice. But evidently that is a guess in the dark, for Littré's medical dictionary describes a kind of green tea, which was highly thought of, called "thé heyswen" or "hyswen," but not to be found in the "Oxford English Dictionary." *A Medical Dictionary* by Robert James, London, 1743, 3 vols. (in which, by the way, Dr. Johnson had a hand) gives the name "Heysham" to the particular tea, and the idea of a surname bobs up again. This idea was further strengthened by the *Encyclopaedia Britannica,* 3rd ed. Edinburgh, 1797, which records the name as "Hyson," so called from the name of the merchant who first imported it. Then Robert John Thornton, in his *New Family Herbal,* London, 1810 (with illustrations engraved on wood by Thomas Bewick—think of that!) as the second variety of green teas, gives the names "Hy-tian, hikiong, hayssuen or hee-

chun—known to us by the name of hyson tea, named from an Indian merchant, who first sold tea to an European, his tea being asked for ever after." More than ever this seemed to pin the name down to a definite person, for does not the *Herbal* tell us that he was an "Indian merchant?" Alas! to look in the "Oxford English Dictionary" suggested itself again, and we were robbed of the romantic picture which had been called up—only to substitute for it a finer fantasy. The word comes from the "Chinese *hsi-ch'un,* in Cantonese hei-ch'un, 'bright spring,' the name of coarse green tea." So, for a time at least, the mystery of this word is solved.

Miss Sawyer wrote that she had been told that the little medicine case had belonged to a "Russian doctor named Alix who was Victor Hugo's (1802-1885) physician . . . was sold at auction after the death of the doctor along with the remainder of his possessions and bought by an antique dealer in the Blv'd Raspail from whom I bought it." Victor Hugo may have had a doctor called Alix, and there are a number of Frenchmen of that name dating from 1738 on in the dictionaries of biography. It is an interesting coincidence that just after the arrival of this gift, a catalogue of old medical instruments issued by Taeuber and Weil of Munich came to the Academy. In it is listed and illustrated exactly the same kind of a medicine case as ours, described as of German origin "about 1700" Pietro Capparoni of Rome wrote a paper on seventeenth and eighteenth century "portable pharmacies" (*Rivista di Storia delle Scienze Mediche e Naturali,* Siena, 1924, 3rd series, XV, No. 1-2, p. 29) and a similar case appears again! It had belonged to Cosimo III, Grand Duke of Tuscany (1642-1723). Finally, in his recent book, *Medicine in Virginia in the Seventeenth Century,* Richmond, 1930, Dr. Wyndham B. Blanton has two illustrations of a "seventeenth century medicine chest" exactly the same as ours except that the key has a different handle and along the back row, instead of bottles, there are four rectangular receptacles of block tin with rectangular metal tops. This case is in the Library of the Richmond Academy of Medi-

cine, Miller Collection. Dr. Blanton kindly writes that it was purchased from Taeuber and Weil, Munich, and it was thought to date from the latter half of the seventeenth century. "It is of Austrian make, having formerly belonged to a physician in ordinary to one of the Austrian emperors whose arms are in the embossed leather lining of the lid."

If the evidence is summed up, it might be fairly concluded that our case dates from the late seventeenth or early eighteenth century, and that two similar other ones we know of came from Germany or Austria. Ours is a very interesting specimen.

ARCHIBALD MALLOCH.

RECENT ACCESSIONS

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Balt., Williams, 1930, 832 p.

Bassler, A. Intestinal toxemia (autointoxication) biologically considered.
Phil., Davis, 1930, 433 p.

Bateson, W. Mendel's principles of heredity.
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Battley, H. Single finger prints.
London, His Majesty's Sta. Off., 1930, 98 p.

Benon, R. Traumatismes et psycho-névropathies.
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Paris, Baillière, 1930, 306 p.

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Richmond, Byrd, [1930], 337 p.

Bodansky, M. Introduction to physiological chemistry. 2. ed.
N. Y., Wiley, 1930, 542 p.

Bonnefon, G. Introduction à l'étude des hypertensions oculaires.
Paris, Doin, 1931 [1930], 143 p.

Bremer, J. L. A text-book of histology, arranged upon an embryological basis, 4. ed. of "Lewis and Stöhr."
Phil., Blakiston, [1930], 568 p.

Bühler, K. The mental development of the child.
London, Paul, 1930, 170 p.

Burks, B. S.; Jensen, D. W. and Terman, L. M. The promise of youth; follow-up studies of a thousand gifted children.
Stanford University, Stanford Univ. Pr., 1930, 508 p.

Campbell, W. R. and Porter, M. T. A guide for diabetics. 4. ed.
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Castle, W. E. Genetics and eugenics. 4. ed.
Cambridge, Harvard Univ. Pr., 1930, 474 p.

Chaussinand, R. La vaccination contre la tuberculose par le B. C. G.
Paris, Doin, 1931, [1930], 195 p.

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Cushing, H. W. The medical career.
Hanover, N. H., Dartmouth College, 1930, 53 p.

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Leipzig, Hirzel, 1930, 124 p.

Davis, A. E. and Douglass, B. Eye, ear, nose, and throat nursing. 3. ed.
Phil., Davis, 1930, 373 p.

Eisenberg, A. A. and Huntly, M. F. Principles of bacteriology. 5. ed.
St. Louis, Mosby, 1930, 322 p.

Findlay, G. W. M. Recent advances in chemotherapy.
London, Churchill, 1930, 532 p.

Fisher, R. A. The genetical theory of natural selection.
Oxford, Clarendon Pr., 1930, 272 p.

Fulmer, E. I. and Werkman, C. H. An index to the chemical action of microorganisms on the non-nitrogenous organic compounds.
London, Baillière, [1930], 198 p.

Gibson, A. G. The mycoses of the spleen.
London, Paul, 1930, 169 p.

Goodrich, E. S. Studies on the structure and development of vertebrates.
London, Macmillan, 1930, 837 p.

Harding, T. S. Fads, frauds, and physicians.
N. Y., MacVeagh, 1930, 409 p.

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N. Y., Minton, 1930, 95 p.

Harris, J. A.; Jackson, C. M.; Paterson, D. G. and Scammon, R. E. The measurement of man.
[Minneapolis], Univ. of Minn. Pr., 1930, 215 p.

History (A) of psychology in autobiography.
Worcester, Clark Univ. Pr., 1930, vol. 1.

Kohn, L. W. Practical treatise on diseases of the digestive system.
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Paris, Gauthier-Villars, 1930, 139 p.

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Leipzig, Kabitzsch, 1930, 135 p.

Lyman, G. D. John Marsh, pioneer.
N. Y., Scribner, 1930, 394 p.

McConnel, J. K. Shorter convalescence.
London, Heinemann, 1930, 132 p.

McMurrich, J. P. Leonardo da Vinci, the anatomist.
Balt., Williams, [1930], 265 p.

Moede, W. Lehrbuch der Psychotechnik.
Berlin, Springer, 1930, vol. 1.

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Paris, Doin, 1931, [1930], 250 p.

Mustard, H. S. Cross-sections of rural health progress.
N. Y., Commonwealth fund, 1930, 230 p.

Osler, (Sir) W. The principles and practice of medicine. 11. ed. revised by Thomas McCrae.
N. Y., Appleton, 1930, 1237 p.

Pack, G. T. and Davis, A. H. Burns; types, pathology and management.
Phil., Lippincott, [1930], 364 p.

Pearl, R. Introduction to medical biometry and statistics. 2. ed.
Phil., Saunders, 1930, 459 p.

von Peham, H. and Amreich, I. Gynäkologische Operationslehre.
Berlin, Karger, 1930, 766 p.

Pollia, J. A. The fundamental principles of alveolo-dental radiology.
Brooklyn, Dental Items of Interest, 1930, 543 p.

Problems and methods of research in protozoölogy. Edited by R. Hegner and J. Andrews.
N. Y., Macmillan, 1930, 532 p.

Runge, H. Blutung und Fluor.
Dresden, Steinkopff, 1930, 108 p.

Savill, T. D. A system of clinical medicine. 8. ed.
London, Arnold, 1930, 1019 p.

Selected readings in the history of physiology. Edited by J. F. Fulton.
Springfield, Ill., Thomas, 1930, 317 p.

Smyth, F. S. and Irvine-Jones, E. I. M. Handbook of pediatric procedures.
N. Y., Macmillan, 1930, 212 p.

Studies on the diagnosis and nature of cancer, by various authors.
Bristol, Wright, [1930], 240 p.

Suter, A. B. W. Dentistry, a profession and a business.
Rochester, Ritter, [1930], 389 p.

Swendiman, G. A. Dental health.
Boston, Stratford, [1930], 121 p.

Tate, F. G. H. Alcoholometry.
London, His Majesty's Sta. Off., 1930, 92 p.

Tobey, J. A. Riders of the plagues.
N. Y., Scribner, 1930, 348 p.

Van Slyke, D. D.; Stillman, E.; Moller, E. [et al]. Observations on the courses of different types of Bright's disease.
Balt., Williams, 1930, 130 p.

Viets, H. R. A brief history of medicine in Massachusetts.
Boston, Houghton, 1930, 194 p.

Walsh, J. J. Mother Alphonsa, Rose Hawthorne Lathrop.
N. Y., Macmillan, 1930, 275 p.

Ward, E. General practice.
London, Bale, 1930, 108 p.

Watson, J. B. Behaviorism. [Rev. ed.].
N. Y., Norton, [1930], 308 p.

Webster, R. W. Legal medicine and toxicology.
Phil., Saunders, 1930, 862 p.

Wilder, R. M. A primer for diabetic patients. 4. ed.
Phil., Saunders, 1930, 138 p.

Williams, J. W. Obstetrics. 6. ed.
N. Y., Appleton, 1930, 1157 p.

Winkler, H. K. A. Die Konversion der Gene, eine vererbungstheoretische Untersuchung.
Jena, Fischer, 1930, 186 p.

PROCEEDINGS OF ACADEMY MEETINGS

DECEMBER

STATED MEETINGS

Thursday Evening, December 4, at 8:30 o'clock

THE THIRD HARVEY LECTURE

"The Peking Man"

G. ELLIOT SMITH

University College, London, England

ALFRED E. COHN, President Harvey Society

DAYTON J. EDWARDS, Secretary Harvey Society

This lecture takes the place of the first Stated Meeting of the Academy for December.

Thursday Evening, December 18, at 8:30 o'clock

Program presented in cooperation with the

SECTION OF ORTHOPEDIC SURGERY

ORDER

I. EXECUTIVE SESSION
   ELECTION OF OFFICERS
   ELECTION OF FELLOWS
II. PRESENTATION OF CASES
   Cases of suppurative arthritis of the hip, Walker E. Swift
III. PAPER OF THE EVENING
   Suppurative arthritis of the hip in children, Russell A. Hibbs
   Discussion, Allen O. Whipple

SECTION MEETINGS

SECTION OF DERMATOLOGY AND SYPHILOLOGY

Tuesday Evening, December 2, at 8:30 o'clock

ORDER

I. READING OF THE MINUTES
II. PRESENTATION OF CASES
   a. Cases from New York University Dermatological Clinic
   b. Miscellaneous cases
III. GENERAL DISCUSSION
IV. EXECUTIVE SESSION

JOINT MEETING OF THE SECTION OF SURGERY

and the

SECTION OF LARYNGOLOGY AND RHINOLOGY

Friday Evening, December 5, at 8:30 o'clock

ORDER

I. READING OF THE MINUTES
II. SYMPOSIUM ON POST-OPERATIVE PULMONARY COMPLICATIONS
   a. Oral prophylaxis, Sigmund W. A. Franken, D.D.S.

b. Surgical aspect, George David Stewart
c. Medical aspect, Henry T. Chickering
d. Bronchoscopic aspect, John D. Kernan
e. Roentgenographic aspect, Eric J. Ryan (by invitation)

III. Discussion. William R. Williams, Carl Eggers, Charles J. Imperatori

Section of Neurology and Psychiatry
Tuesday Evening, December 9, at 8:30 o'clock

ORDER

I. Reading of the Minutes
II. Clinical Presentation
(from the Psychiatric Institute and Hospital) Patient with schizophrenia, illustrating problems of adjustment, Leland E. Hinsie
III. Papers of the Evening
a. Orientations of the training and practice in Neurology and Psychiatry, Adolf Meyer, Johns Hopkins University, Baltimore
b. Have psychological concepts a practical value in Neuropsychiatry? Edward A. Strecker, Jefferson Medical School, Philadelphia (by invitation)
Discussion, Bernard Sachs, Smith Ely Jelliffe, J. Ramsay Hunt, Israel Strauss, Paul Schilder (by invitation), Mortimer W. Raynor
IV. General Discussion
V. Executive Session

Section of Pediatrics
Thursday Evening, December 11, at 8:30 o'clock

ORDER

I. Papers of the Evening
a. A new symptom-complex: softness and deformity of the chest, Alfred F. Hess
Discussion, Charles R. Stockard
b. Asymmetry of the face and head in infants and children, David Greene (by invitation)
Discussion, Milo Hellman
c. Influence of intravenous vaccination with hemolytic streptococcus on the incidence of rheumatic fever in children, May G. Wilson
Discussion, Oscar Schloss

Section of Otology
Friday Evening, December 12, at 8:30 o'clock

ORDER

I. Reading of Minutes
Program by the New York League for the Hard of Hearing, Inc.
II. Demonstration of Lip Reading
a. Adult. Evelyn A. Parry, National Lip Reading Champion
b. Child. By children from the League's Educational Clinic. Demonstration conducted by Estelle E. Samuelson, in charge of the League's Educational Work

III. Papers of the Evening
  a. Information and social service given by the League, Annetta W. Peck, Executive Secretary (by invitation)
  b. Otological research in the clinic, Edmund Prince Fowler, Director of Clinics and Research (by invitation)
  Discussion, Thomas J. Harris, E. Ross Faulkner
IV. General Discussion
V. Executive Session

Section of Ophthalmology

Monday Evening, December 15, at 8:30 o'clock

ORDER

I. Reading of the Minutes
II. Presentation of Cases
  a. Recurrent epidermoid carcinoma (lantern slides), A. H. Cochran (by invitation), G. Allen Robinson
  b. A case of keratoconus with Muller's contact lenses (lantern slides), Olga Sitchevska (by invitation), Laurence D. Redway (by invitation)
  c. Thrombosis of central retinal vein, Thomas Curtin
  d. Embolism of central retinal artery, Thomas Curtin
  e. Case of juvenile glaucoma, Martin Cohen
III. Papers of the Evening
  a. Puncture of the anterior chamber in glaucoma, Peter C. Kronfeld, University of Chicago (by invitation)
  b. Vitamin A in the retina, Arthur M. Yudkin
  c. The blue arcs of the retina and a probably allied blue after-image, Benjamin Friedman (by invitation)
IV. General Discussion
V. Executive Session

Section of Medicine

Tuesday Evening, December 16, at 8:30 o'clock

ORDER

I. Papers of the Evening
  a. An electrocardiographic study of the heart in lobar pneumonia, Arthur C. deGraff, Janet G. Travell (by invitation), J. Allen Yager (by invitation)
  b. Paravertebral alcohol injections for the relief of cardiac pain; a summary of experience to date and a report of nine cases, Robert L. Levy, Richmond L. Moore (by invitation)
  c. A further report on the incidence and prognosis of angina pectoris; a study of 500 cases, Paul D. White, Boston (by invitation)
II. Discussion, Arthur M. Master, John Wykoff, B. S. Oppenheimer, Lewis A. Conner

Section of Genito-Urinary Surgery
Wednesday Evening, December 17, at 8:30 o'clock

ORDER

I. Reading of the Minutes
II. Presentation of Cases
Heminephrectomy for anomalous reduplication of pelvis and ureter, with lantern slide demonstrations, Samuel Lubash (by invitation)
III. Paper of the Evening
Notes on some present day surgical problems in urology, Homer G. Hamer, Indiana University School of Medicine, Indianapolis (by invitation)
Discussion, Clarence G. Bandler, Howard S. Jeck, Clarence R. O'Crowley (by invitation), J. Sturdivant Read
IV. General Discussion
V. Executive Session

Section of Obstetrics and Gynecology
Tuesday Evening, December 23, at 8:30 o'clock

ORDER

I. Reading of the Minutes
II. Papers of the Evening
a. The effect of the artificial menopause on systemic menstrual disturbances, James A. Corscaden
b. Is salpingitis a factor in the incidence of tubal pregnancy? Royal C. Van Etten, discussion, Maurice O. Magid
c. Trichomonas infection of the vagina (moving pictures), Joseph W. Draper (by invitation), discussion, Henry D. Furniss, Sophia J. Kleegman (by invitation)
d. Hydatid mole and chorion epithelioma with special reference to the Aschheim Zondek test, W. E. Studdiford (by invitation), Raphael Kurzrok (by invitation), Isador W. Kahn
e. Pernocton as an analgesic in obstetrics and gynecology, Radford Brown, Howard Moloy, Marion Laird (all by invitation)
III. General Discussion
IV. Executive Session

Section of Laryngology and Rhinology
The regular December meeting was not held for the reason that the Section combined with the Section of Surgery in presenting a meeting on December 5.

New York Roentgen Society
In affiliation with
The New York Academy of Medicine
Monday Evening, December 15

ORDER

I. 8:30 p.m. to 9:00 p.m.
Demonstration of interesting cases and roentgenograms

II. Paper of the Evening
The value of the x-ray in the diagnosis of intracranial tumors, Merrill C. Sosman, Boston (by invitation)
III. General Discussion
To be opened by Charles A. Elsberg, Charles W. Schwartz
IV. Executive Session
Ross Golden, Pesident
J. Bennett Edwards, Secretary

New York Meeting of the
Society for Experimental Biology and Medicine
Under the auspices of
The New York Academy of Medicine

Wednesday Evening, December 17, at 8:15 o'clock

I. Electrocardiographic changes in pneumonia, A. M. Master, A. Romanoff
II. a. Biochemical studies of human semen
b. The action of semen on the human uterus, R. Kurzrok, C. C. Lieb
III. Induction of tetany in rachitic rats by means of a normal diet, A. F. Hess, M. Weinstock, H. R. Benjamin, J. Gross
IV. Fluctuations of the concentration of "blood sugar" in vitro, I. S. Kleiner
V. Effect of posterior pituitary extracts on the lactic acid of the blood, H. E. Himwich, J. Fazikas
VI. On the nature of the dye penetrating nitella from cresyl blue, M. Irwin
VII. Value of hexuronic acid in the treatment of Graves' disease with suprarenal cortex, D. Marine, E. J. Baumann, B. Webster
VIII. Fate of orally administered specific polysaccharide of pneumococcus, V. Ross
IX. A practical method for concentrating chill free pneumococcus antibodies from sera without use of salt precipitations, E. J. Banzhaf, A. J. Klein
Peyton Rous, President
A. J. Goldforb, Secretary

The New York Pathological Society
In affiliation with
The New York Academy of Medicine

Wednesday Evening, December 17, at 8:30 o'clock

ORDER

I. Papers of the Evening
a. Ruptured ovarian pregnancy, Arthur J. Lapovsky (by invitation), Boris Kwartin
b. Injuries of the pons, B. M. Vance

c. An evaluation of the erythrocyte sedimentation reaction as a routine diagnostic procedure in the general hospital, Helen Sinclair Pittman (by invitation)

d. Albers-Schoenberg's disease; "marble bones," Nicholas M. Alter, M. C. Pease, A. G. DeSanctis (by invitation)

II. Executive Session

Leila Charlton Knox, President, St. Luke's Hospital

Beryl H. Paige, Secretary, The Babies' Hospital

FELLOWS ELECTED JANUARY 7, 1931

Julian M. Freston.....59 East 54th Street
Virginius B. Hirst.....135 East 65th Street
Grant C. Madill.....92 Caroline St., Ogdensburg, N. Y.
Charles W. Martin.....1826 Cornaga Ave., Far Rockaway
Henry M. Moretsky.....322 Central Park West
Edgar M. Pope..... 71 Park Avenue
Paul B. Sheldon.....21 East 87th Street
Benjamin R. Shore.....57 East 88th Street
Marion B. Sulzberger.....200 West 59th Street
Clifford Lee Wilmoth.....U. S. Marine Hospital, Staten Island

OBITUARY OF ERNST FUCHS

Ernst Fuchs, born in Vienna, in 1851, died in that city after a brief illness of angina pectoris on November 21, 1930. He received his medical education in Vienna and was a special pupil of Brücke, Billroth and Arlt. After graduating in 1874 and acting as assistant to Arlt from 1876 to 1880, he became Professor of Ophthalmology, at Liège, at the early age of 29. In 1885 he returned to Vienna, to succeed Jaeger, and he remained as professor and director of the Eye Clinic, until 1916, when he retired because of the age-limit.

During these years the "Klinik Fuchs" became far-famed and the mecca of all young ophthalmologists; scarcely an oculist of importance in this generation but has profited and has been inspired by the teachings of this great scientist.

Fuchs was a most careful clinical observer and has given us the first description of many important conditions of the eye; he was just as painstaking a microscopist and has explained many pathological ocular lesions. He is probably best known for his text book on "Diseases of the Eye," which has been a classic in German, appearing in many editions and translations.

A great linguist, an enthusiastic Alpine tourist in his earlier years, his love of travelling brought him to most parts of the world. He has repeatedly come to this country where he had many friends and admirers. His last visit was in 1929 when he was one of the principal speakers at the

inauguration of the Wilmer Institute, at the Johns Hopkins Hospital; he subsequently received the Leslie Dana medal, at the St. Louis Meeting of the National Society for the Prevention of Blindness, and in New York was made an honorary Fellow of the Academy of Medicine.

A man of great simplicity of character, of great industry and with a remarkable interest in all subjects he not only made many valuable contributions to his specialty, but has helped and inspired a host of pupils who are scattered all over this world.

ARNOLD KNAPP.

DEATHS OF FELLOWS OF THE ACADEMY

FREDERICK MCKELVEY BELL, M.D., 815 Park Avenue, New York; graduated in medicine from Queen's University, Ontario, Canada, in 1903; elected a Fellow of the Academy March 1, 1928; died, January 6, 1931. Dr. Bell was a Fellow of the American Medical Association, a Fellow of the American College of Surgeons, a member of the County and State Medical Societies and Associate Gynecologist to Polyclinic Hospital.

CHARLES RAYEVSKY, M.D., Liberty, N. Y.; graduated in medicine from Bellevue Hospital Medical College, New York City, in 1896; elected a Fellow of the Academy February 1, 1912; died, December 22, 1930. Dr. Rayevsky was a Fellow of the American Medical Association, a member of the National Tuberculosis Association and the American Society for the Advancement of Science.

HAROLD ELMORE SANTEE, M.D., 135 East 65 Street, New York City; graduated in medicine from Cornell University Medical College, New York City, in 1908; elected a Fellow of the Academy February 3, 1921; died, December 26, 1930. Dr. Santee was a Fellow of the American Medical Association, a Fellow of the American College of Surgeons, a member of the Surgical Society, a member of the Alumni Society of Presbyterian and Lying-in Hospitals, Director of Surgery to Bellevue Hospital, Surgeon to Polyclinic Hospital and Consulting Surgeon to Mt. Vernon and North Country Hospital.

EDGAR STEINER THOMSON, M.D., 121 East 60 Street, New York; graduated in medicine from the University of Pennsylvania, in 1893; elected a Fellow of the Academy March 1, 1906; died, January 12, 1931. Dr. Thomson was a Fellow of the American Medical Association, a member of the County and State Medical Societies, a member of the American Ophthalmological Society, a member of the Ophthalmological Society. He was Surgeon and Pathologist to the Manhattan Eye, Ear and Throat Hospital, Consulting Ophthalmologist to Perth Amboy and Ossining Babies' Hospital, Englewood and Bronx Eye and Ear Infirmary.

DATES OF ACADEMY MEETINGS

STATED MEETINGS

1st and 3rd Thursdays.

SECTION MEETINGS

Dermatology and Syphilology, 1st Tuesday.
Surgery, 1st Friday.
Neurology and Psychiatry, 2nd Tuesday.
Historical and Cultural Medicine, 2nd Wednesday of November, January, March and May.
Pediatrics, 2nd Thursday.
Otology, 2nd Friday.
Ophthalmology, 3rd Monday.
Medicine, 3rd Tuesday.
Genito-Urinary Surgery, 3rd Wednesday.
Orthopedic Surgery, 3rd Friday.
Obstetrics and Gynecology, 4th Tuesday.
Laryngology and Rhinology, 4th Wednesday.

TRUSTEES, COUNCIL AND COMMITTEE MEETINGS

Trustees, 4th Wednesday.
Council, 4th Wednesday.
Committee on Admission, 1st Wednesday.
Committee on Library, 2nd Tuesday.
Public Health Relations Committee, Mondays.
Committee on Medical Education, 2nd Thursday.

DONATIONS TO THE LIBRARY FUNDS

Donations and bequests are solicited by The New York Academy of Medicine for the maintenance and expansion of the Library.

A donation or bequest of $5,000 or more will provide for a special library fund, the income of which may be used for the general purposes of the Library or restricted to the purchase of books and periodicals, as the donor or testator may indicate.

FORM OF BEQUESTS

The following is a brief legal form as a suggestion under which bequests may be made in behalf of the Academy:

I give, devise and bequeath unto "The New York Academy of Medicine" of the City of New York, State of New York, a corporation duly incorporated by the Legislature of the State of New York by an act entitled, "An Act to Incorporate The New York Academy of Medicine," passed June 23, 1851, and amended June 4, 1853, June 2, 1877, and April 25, 1924, . . .

1931

STANDING COMMITTEES OF THE ACADEMY

Committee on Admission
Alexis V. Moschcowitz, *Chairman*

Fred P. Solley
Rolfe Floyd
Richard T. Atkins
Ward J. MacNeal
DeWitt Stetten
Harbeck Halsted
Henry W. Cave
Alfred T. Osgood
Harry M. Imboden
George M. MacKee

Emanuel D. Friedman

Committee on Library
Ernest G. Stillman, *Chairman*

Eugene F. DuBois
Alfred F. Hess
J. Ramsey Hunt
Alfred E. Cohn

Committee on Public Health Relations
James Alex. Miller, *Chairman*

Executive Committee

George Baehr
Charles L. Dana
Lewis F. Frissell
Charles Gordon Heyd
Adrian V. S. Lambert
Samuel W. Lambert
James B. Murphy
Bernard Sachs
Frederic E. Sondern
Philip Van Ingen
George B. Wallace
E. H. L. Corwin, *Executive Secretary*

Committee on Medical Education
Nellis B. Foster, *Chairman*

Executive Committee

Harlow Brooks
Arthur F. Chace
Carl Eggers
William W. Herrick
Edward H. Hume
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John J. Moorhead
B. S. Oppenheimer
George Gray Ward
Frederick P. Reynolds, *Medical Secretary*

Grace Carstensen, *Executive Secretary*

COMMITTEES OF THE COUNCIL AND TRUSTEES

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Royal S. Haynes
Walter L. Niles
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George Baehr
Haven Emerson

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A. Benson Cannon
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Ernest Fahnestock
Arnold Knapp
Samuel J. Kopetzky
Edgar Stillman
Orrin Sage Wightman

Iago Galdston, *Executive Secretary*

OFFICERS OF SECTIONS, 1931

DERMATOLOGY AND SYPHILOLOGY, 1st Tuesday

Chairman	*Secretary*
Walter J. Highman	A. Benson Cannon
853 Seventh Avenue	371 Park Avenue

SURGERY, 1st Friday

Otto Carl Pickhardt	Robert H. Kennedy
117 East 80th Street	115 East 61st Street

NEUROLOGY AND PSYCHIATRY, 2nd Tuesday

Michael Osnato	Joseph H. Globus
121 East 60th Street	1185 Park Avenue

HISTORICAL AND CULTURAL MEDICINE

2nd Wednesday of November, January, March and May

Frederick Peterson	Howard Reid Craig
20 West 50th Street	125 East 74th Street

PEDIATRICS, 2nd Thursday

Hugh Chaplin	John Caffey
108 East 68th Street	Babies' Hosp., 167th St. & Bway.

OTOLOGY, 2nd Friday

Hugh B. Blackwell	Rene Hector Huvelle
2 East 54th Street	17 East 38th Street

OPHTHALMOLOGY, 3rd Monday

Ernest F. Krug	William F. C. Steinbugler
988 Fifth Avenue	815 Park Avenue

MEDICINE, 3rd Tuesday

Arthur H. Terry, Jr.	Harold E. B. Pardee
161 East 64th Street	160 East 64th Street

GENITO-URINARY SURGERY, 3rd Wednesday

Thomas J. Kirwin	Meredith F. Campbell
730 Park Avenue	33 East 68th Street

ORTHOPEDIC SURGERY, 3rd Friday

Alan DeF. Smith	Isadore Zader
410 East 57th Street	1095 Park Avenue

OBSTETRICS AND GYNECOLOGY, 4th Tuesday

David N. Barrows	Gerard L. Moench
130 East 56th Street	30 East 58th Street

LARYNGOLOGY AND RHINOLOGY, 4th Wednesday

John M. Loré	Robert E. Buckley
325 West End Avenue	829 Park Avenue